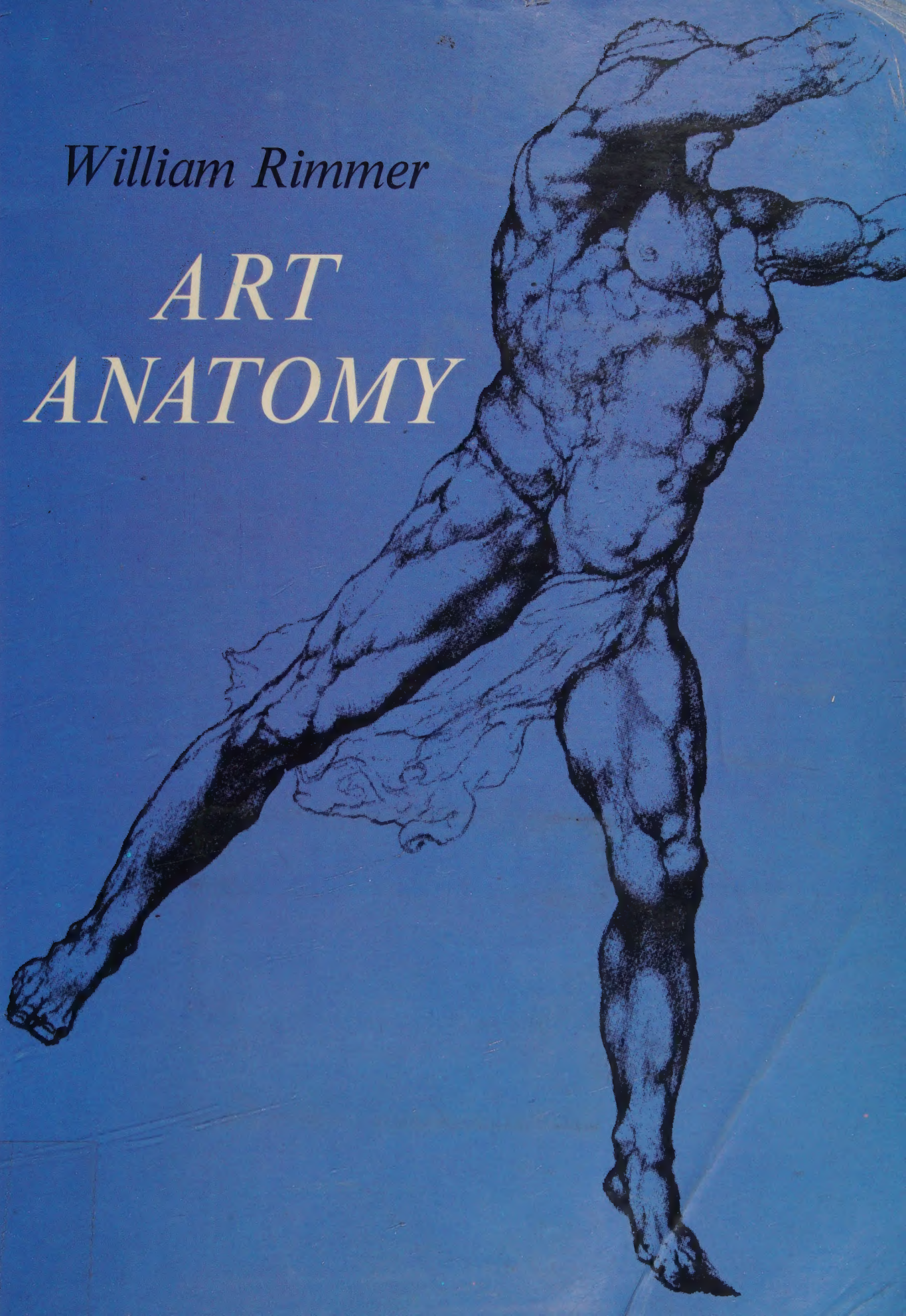
William Rimmer

ART ANATOMY



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ART ANATOMY

By WILLIAM RIMMER

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PUBLISHER'S NOTE

This new Dover edition, first published in 1962, is an unabridged and revised republication of the work originally published by Little, Brown, and Company in 1877.

For clarity, the arrangement of certain illustrations has been altered, and a few illustrations have been enlarged or slightly reduced in order to fit the work into this new format. The reader will observe that occasionally Rimmer's observations and diagram symbols are not entirely clear or complete. The publisher is aware of this, but chose to present the work without annotation because the faulty references are in every instance only incidental to the point being made. However, Dr. Rimmer's commentary has been edited to delete certain observations regarding minority groups which would seem offensive to the modern reader. Opinion and taste have changed greatly since this book was first published, and we are sure that Dr. Rimmer himself would now agree that these comments could well be omitted.

A new Introduction has been especially prepared for this Dover edition.

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INTRODUCTION

WILLIAM RIMMER, sculptor, painter, and art anatomist, was born in Liverpool, England, on February 20, 1816. In 1818 the Rimmer family moved to Nova Scotia, and in 1826 to Boston, where William Rimmer spent his boyhood years.

Few artists in America have had a more unusual background. His mother was an Irish kitchen maid, his father a member of the French nobility who cloaked his identity under the name "Thomas Rimmer" and earned his living making shoes. Born under the Terror, "Thomas Rimmer" had apparently been spirited to England as a child and given to a South Lancashire yeoman family named Rimer to rear as their own son. Informed in early manhood of his aristocratic background, Rimmer waited for the return of his family to power in France; when these Bourbon hopes failed to materialize, he married a red-haired Irish woman, abandoned his commission in the British army, and, in despair and disappointment, sailed for the New World, where he brought up his family in poverty and extreme seclusion. The bitterness of the father passed on to the eldest son. Whatever the truth in the Bourbon claims may have been, there is reason to believe that William Rimmer, America's first great sculptor, grew up in the conviction that he was the son of the Dauphin of France.

For all its poverty, the Rimmer household in South Boston — the Boston of parish priests and street gangs — was one of refinement and learning. Thomas Rimmer educated his children as he himself had been educated, teaching them history, music, mathematics, ornithology, French, Latin, and Hebrew, while he pursued his own hobbies of electricity and metallurgy. Thomas Rimmer may have worked as a cobbler, but he had the viewpoint — and sometimes the nervous instability — of a dispossessed prince.

From an early age the boy William Rimmer showed signs of artistic ability. He cut butterflies from his mother's chintz quilts and at fifteen carved a small figure, called "Despair," from gypsum picked up at a granite yard at Wales Wharf near his home. It survives today to reveal remarkable intensity and instinct for anatomical detail. A study of Rimmer's father, it is perhaps the first male nude figure carved in America, anticipating Crawford's "Orpheus" by fifteen years.

His father's growing mental derangement forced William to assume early responsibility for the younger children. At fourteen he was helping out in the family finances

with his earnings as a draftsman and sign painter, and for the next seven years he worked diligently at typesetting, soap making, shoe making, and lithography. To the end of his life when all else failed him he supported his family by making shoes. Despite these difficulties, young Rimmer managed to produce paintings for the Endicott Street Catholic Church and other chapels and worked furiously at an eight-foot canvas entitled "After the Death of Abel"— afterward exhibited, at an entrance fee of twenty-five cents, by a friend who lost sixty dollars on the deal. Forming a sign-painting partnership with Elbridge Harris, Rimmer painted a huge "Cromwell at the Battle of Marston Moor," which hung opposite Old South Church and shocked Boston with its splashes of yellows and reds.

In 1840 Rimmer married Mary Hazard Peabody, a Quaker, and after a tour through Massachusetts of itinerant portrait painting, charging five to fifty dollars per portrait, settled down at Brockton and began the self-study of medicine. A friendly neighbor, Dr. Abel Kingman, lent him books from his library and allowed him, as did other Brockton physicians, to assist on calls. Rimmer became known for his "cold-water" treatment of typhoid, cholera, and smallpox, and in 1855 received a license to practice from the Suffolk Medical Society. He was the prototype of the country doctor: patient, quiet, sympathetic. Once, thrown from his buggy while on a call, he recovered himself and went on to tend his patients, setting his own nose before starting home. Long after he had abandoned medicine for art, he was known to his neighbors and townspeople as Dr. Rimmer.

It was perhaps because of his growing reputation as a physician that he was not accepted as an artist when his works — created at driving speed during his spare hours to fill out the family income — began to be shown. A head of St. Stephen, which he cut out of solid granite in four weeks of December, 1860, attracted the attention of his neighbors, particularly Stephen Higginson Perkins, who arranged for it to be shown in the Boston gallery of Williams and Everett. The public saw in it only the work of a gifted amateur, as they did in the case of his masterpiece, the "Falling Gladiator," produced under the worst of conditions in East Milton in 1861. For this task the basement was unheated; the clay froze and dried; his hands were bleeding when he finished. He had used no model but his own body, creating out of homemade utensils and smoothing the statue with a toothbrush when it was done. The public called it an "exhibition of muscles" by a dilletante. Even after it had been accepted by the Paris Salon of 1862 it was attacked — as Rodin's "Age of Bronze" would later be — as being a hoax, a cast from life from Rimmer's own body. Rimmer was hurt, but knew too little of the art world to defend himself. Indeed, asked to set a price for his "St. Stephen," he figured it modestly in terms of a stonemason's hourly pay and was amazed to be offered the sum of five hundred dollars.

The "Gladiator," however, made clear what had been only suggested by Rimmer's early work — that no artist in America had more understanding of human anatomy. Dr. Rimmer had seen the human body in sickness and strength; had attended the dissecting rooms of the Massachusetts Medical College and studied the plates in Vesalius, Albinus, Sabatini, Camper, and de Fau and Gray. His models were in his head — the

muscles and tendons of his patients. "Anatomy is the only subject," he once said, and indeed it was as an anatomist that Rimmer was increasingly known.

In 1861 Rimmer was invited to teach art anatomy in Boston and began a series of lectures in room 55 of Studio Building. By 1863 the demand had become so great that he took the lectures to Lowell Institute, where, because of the crowded hall, he delivered an extra series in the afternoon for women students. He had no objection to teaching women, and for those who felt they should be excluded or, as some suggested, veiled, Rimmer had nothing but contempt. "Art is as independent of sex as thought itself," he wrote, and became one of the champions of women's education in America.

From the first, Rimmer was an inspired teacher. He would enter the classroom saying "Here is a face I saw on the way here" and draw a striking likeness on the blackboard. In considering a muscle, he would first draw it independently on the board, then in its relations to the formation of the entire figure. Often his romantic nature would not allow him to stop there, and before the board would be erased it would be covered with clouds, angels, demonic armies in celestial warfare.

Many of his subjects he took from life. Thus the profile of Thomas Rimmer appears as "The Highest Average Outline: English" in a comparison of skull types inspired by Darwin's *Expression of Emotion in Men and Animals.* For other models he used the athletes at a private gymnasium at the corner of Eliot and Tremont Streets. At times the day's events moved him: when Charles Sumner died, Rimmer illustrated his lecture with a drawing of "Grief," for him a familiar subject.

In 1866, after the partial failure of his one public commission, the statue of Alexander Hamilton on Commonwealth Avenue in Boston, Rimmer accepted an invitation from Peter Cooper to become director, at a salary of $4000 a year, of the School of Design for Women at New York's Cooper Union for the Advancement of Science and Art. Rimmer's four years at Cooper Union were both stimulating and stormy. "Stubborn and unreasonable" was the opinion of many of his colleagues when he proposed sweeping changes in the curriculum or suggested women might learn art anatomy as well as "designing for manufacturing patterns." "You are a remarkable man, Dr. Rimmer," Abraham S. Hewitt, speaking for the harried trustees, told him, "but a hard man to manage." Rimmer answered that he had come to manage, not to be managed. When in 1870 he was offered a subordinate position as instructor, he declined and returned to Boston. "The trustees are not artists" was his final word.

By now Rimmer was known as a sculptor and teacher, if an eccentric one. He joined the Boston Art Club and for the first time met the famous artists of his day. He was too much his own man, however, to fit easily into the recognized art world. When the successful painter William Morris Hunt asked him to collaborate on the murals for the New York State Capitol at Albany, Rimmer made such impertinent suggestions for changes that Hunt paid him $100 for his time and was relieved to see him go.

The same lack of success followed him in other ventures. A photo-sculpture concern to which he lent his name proved to be spurious. Inventions by which he hoped to ease

his family's poverty — including a new type of gun lock and an unbreakable trunk — came to nothing. A scientific aquarium he was sponsoring went bankrupt before it could open. As a final blow, a heroic figure of "Faith" which he had designed for the top of the Pilgrim Monument in Plymouth was drastically altered by the plasterer. Rimmer's health broke; he suffered a complete breakdown, and in August, 1879, died at his daughter's home in South Milford, as disappointed by life as his father before him.

When the following year an exhibition of 146 examples of Rimmer's painting, drawing, and sculpture opened in Boston, the public seemed never to have heard of him. Even his closest associates were surprised to learn that he painted; indeed, his paintings were so little valued that today only one-sixth survive. Yet it was immedately apparent to some observers that here was work — in such paintings as "The Lion in the Arena" and pieces of sculpture like "The Dying Centaur" — of great immediacy and power. While a final estimate of his work is yet to be made, the exhibition sponsored jointly by the Whitney Museum of American Art in New York and the Museum of Fine Arts in Boston in 1946-1947 showed Rimmer to be a highly imaginative painter and the most gifted American sculptor of his time. In the boldness and speed of execution of his work, he has been hailed as a forerunner of the Ash Can School and even of modern-day Abstract Expressionism.

He was hampered by many things — the unusual circumstances of his father's birth, the absence of encouragement or contact with other artists, the grinding poverty that followed him all his life. Of equal importance was the fact of his being an American at a time when art was thought to reside in Europe. "Ah! a foreign painting, I see," an interested art dealer said upon seeing his work. "No," Rimmer's friend replied, "it is the work of a poor country physician," whereupon, the friend relates, the dealer "immediately began to discover faults in it." His students knew and appreciated him better. "The poor long-suffering doctor" Daniel Chester French wrote of him, " . . . he just missed being great."

Rimmer's *Art Anatomy* is the product of his later years and perhaps his greatest work. For years concern had been expressed that Rimmer's greatest drawings, the blackboard figures that accompanied his lectures, were being lost; one student, Mrs. John M. Forbes of Milton, had even traced the drawings onto tracing paper, later to be transferred to cloth, to preserve them. At the same time, Rimmer's illuminating comments were, except for lecture abstracts that appeared in the *Providence Journal* in 1872, going unrecorded. The *Art Anatomy,* published by means of a gift of $2000 by Mrs. W. A. Tappan of Boston, answered both problems. Finished by Rimmer during the summer of 1876 at Union, New Hampshire, and reproduced by a heliotype process, in red ink from Rimmer's pencil drawings, the book of eighty pages 10 by 14 inches in size sold for $50 in an edition of 50 copies. It is perhaps the finest work of art anatomy in America.

Rimmer was, of course, a master draftsman, who drew, according to his family, on every scrap of paper in sight, and here, spared the necessities of color, he could go beyond his paintings into a freer treatment of the subject he loved the most — the human body. He drew it, after his own experience, at the limits of human endurance. As the "Falling

Gladiator" represents the body about to break under tension, his many drawings of falling figures (the true test of a draftsman, according to Ingres) represent the body in its final struggle with space. Rimmer saw life as a contest, and it is not without significance that he was fond of Beethoven and valued Blake even above Michelangelo. "Make your men deep-chested and narrow-waisted, like a lion," he wrote, "for we live in this world not by let but by opposition."

If Rimmer loved the body, he loved its features most. He knew Lavater's charts of the emotions and the phrenological system of Spurzheim, and firmly believed that physiognomy had meaning, that no one knew the human face who did not know the battle of morality taking place there. Thus he could speak of "high types" and "low types" of man, and write of a contemporary art critic: "What a supercilious nose; what a half-boorish, sneaking mouth; what a detestable play of muscles of the face."

His aim in the *Art Anatomy,* of course, was pedagogical — he fervently believed in art education and proper training ("As well set a person down to read a foreign language before he has learned the values of the letters . . . as to ask a person to draw a human figure without some knowledge of the bones and muscles which compose it"). The finished product, however, goes far beyond pedagogy. Rimmer had conceived of a book of art instruction; he produced a work of art in itself.

It is safe to say that the kind of art anatomy Rimmer represents — the anatomy of a Leonardo which is itself art — no longer exists in America. We want more objective information now, truth without beauty. Nor can we accept what seems the naïve interpretation of the passions — that nobility resides in the brow or avarice in the mouth. If Rimmer's judgments seem dated to us, however, it is significant that he *made* judgments, that he gave nobility a place at all. We have lost the simple-minded dream, and with it much of the human drama, and much of the art.

The final evaluation of Rimmer is only beginning to be made. As a teacher he influenced such figures as John La Farge, Daniel Chester French, Frederic Vinton, and Frank Benson. As a painter he was a generation ahead of his time. As a sculptor he produced one masterpiece — the "Falling Gladiator" — and had few equals in nineteenth-century America. We believe his *Art Anatomy* to be the greatest art educational work ever produced in the United States.

Dover Publications publishes it now in the hope that it will be as useful and instructive for a new generation as Rimmer's lectures were in his own time. If it has the further virtue of reawakening interest in one of America's greatest and most neglected artists, this book will have fulfilled its purpose.

ROBERT HUTCHINSON

NEW YORK, 1961

CONTENTS

THE HEAD

	Page
The Skull	2
The Skull—Superficial Muscles of the Face	3
The Head an Egg-shaped Oval	4
Facial and Cerebral Sections	6
The Skulls of Men and Apes Compared	7
Heads of the Animal Type	9
The Human and Animal Planes of the Face	10
Mixed Types of Heads	11
Proportions of the Average Male Head—The Eyes	12
The Eyebrows, Eyelids	13
The Mouth—Human and Animal Forms of Lips	14
The Chin and the Nose	16
The Nose—Its Plan and Character	17
The Nose—Sections of the Face	18
Skulls of Man, Lion and Ape Compared	20
Various Jaws Compared	22
The Ear—Proportion and Position	24
The Forms of the Head and Neck—Large and Small Features	26
The Hair and Beard—Relation to Physical Constitution	28
Hair, Female Form—Orderly	32
Hair, Female Form—Disorderly and Artificial	33
Comparison of Male, Female and Infant Heads	34
Plan of Infant Heads	36
Comparison of Male, Female and Infant Heads	38
The Head—Maturity and Old Age	40
Male, Female and Infant Heads—Proportions	42
Expressions—Pleasant	44
Expressions—Aggressive	45
Expressions—Passionate	46
Expressions—Suspicious, Hateful	47
Expressions—Intense	48
Expressions—From the Body	49

Expressions—Resistant, Pleasurable 50
Expressions—Pleasurable 51
Compound Expressions 52
Expressions—Pain, Grief, Sadness 54
Expressions—Fear, Terror and Surprise 56
Expressions—Fear, Despair, Disgust 57
Heads—Male and Female Characteristics 58
Heads—Types Compared 60

THE BODY

The Skeleton 66
The Sternum—Clavicles and Ribs 68
The Spinal Column and Vertebrae 69
Alterable and Unalterable Sections of the Body 70
Anatomical Forms—Muscular Outlines 71
The Clavicle 72
The Hand—Tendons of the Wrist 73
The Hand 74
The Knee and Pelvic Joints 76
The Bones of the Foot 78
The Knee and Ankle Joints 80
The Shoulder Joints 82
Bones of the Shoulder and Arm 84
The Neck 86
The Neck Muscles 88
The Neck Muscles in Use 90
Regions of the Body 92
Muscles of the Arm 93
The Arm—Humerus and Deltoid 94
The Arm—Biceps 96
The Upper Arm 98
The Forearm 100
The Use of Muscles as Elements of Proportion 102
The Muscles of the Back 104
The Pectoralis Major 108
The Abdomen 112
"The Call to Arms" 115
The Pelvis and Thigh 116
The Leg Muscles 124
Comparison of Legs 126
Muscular Expression 127
Proportions of the Body 128

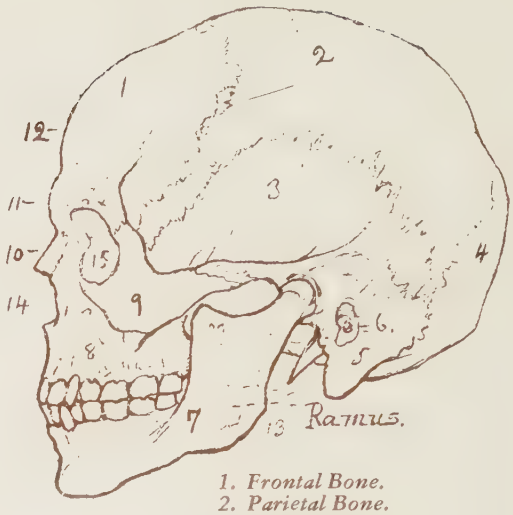
Proportions—Points of Interest 135
Plan of the Male Figure 136
Proportions of the Male Figure 138
Proportions—The Head 140
Infant Proportions 141
Infant Proportions—Stages of Development 144
Female Proportions 145
Fore - shortening 150

THE HEAD

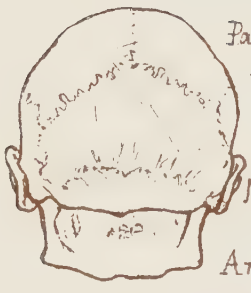
No. 4
Head an egg-shaped oval

× *Super-orbital ridge*

*No. 1**
Super-orbital ridge



1. *Frontal Bone.*
2. *Parietal Bone.*
3. *Temporal Bone.*
4. *Occipital Bone.*
5. *Mastoid Process of Temporal Bone.*
6. *Auditory Cavity.*
7. *Inferior Maxillary Bone.*
8. *Superior Maxillary Bone.*
9. *Malar Bone.*
10. *Nasal Bone.*
11. *Super-orbital Eminence.*
12. *Frontal Eminence.*
13. *Angle of Jaw.*
14. *Wing of Sphenoid.*



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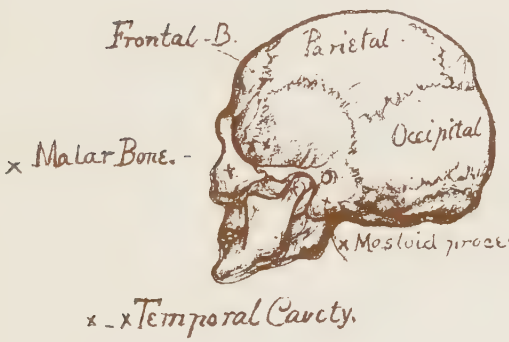

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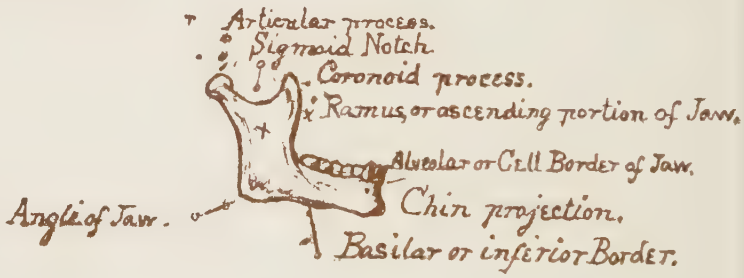
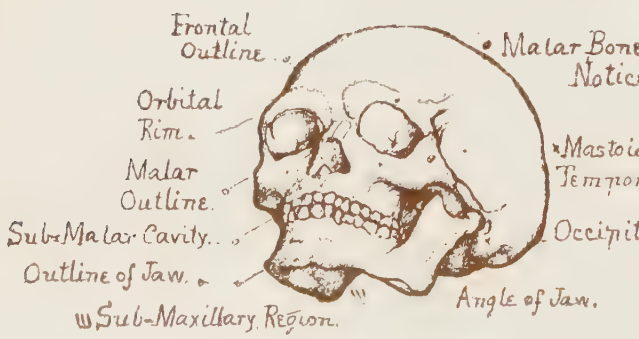
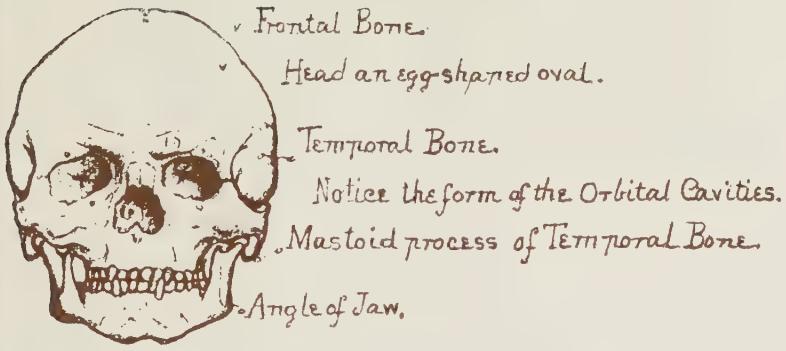




No. 6
Notice carefully the form of the several parts as seen from beneath.

**Nos. 2 and 3 were not included by Dr. Rimmer.*



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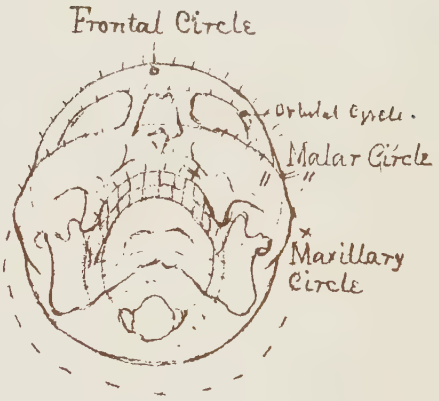
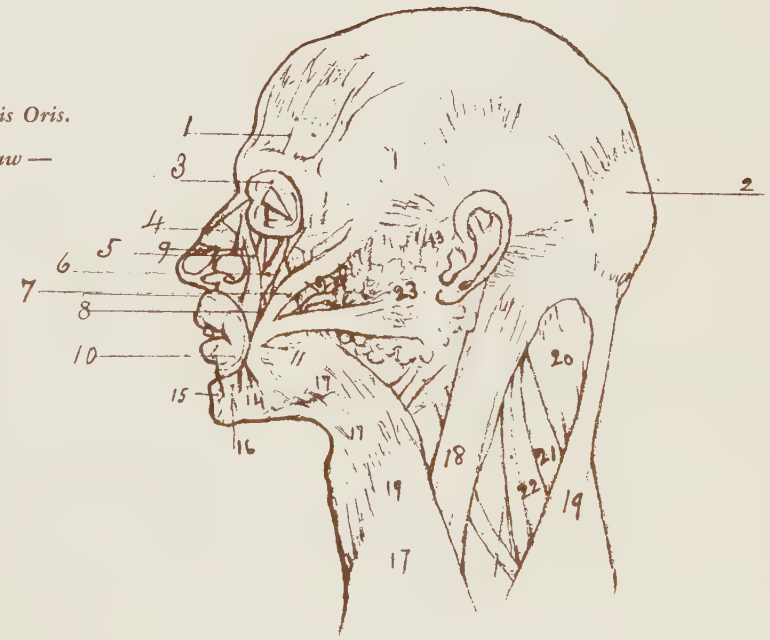


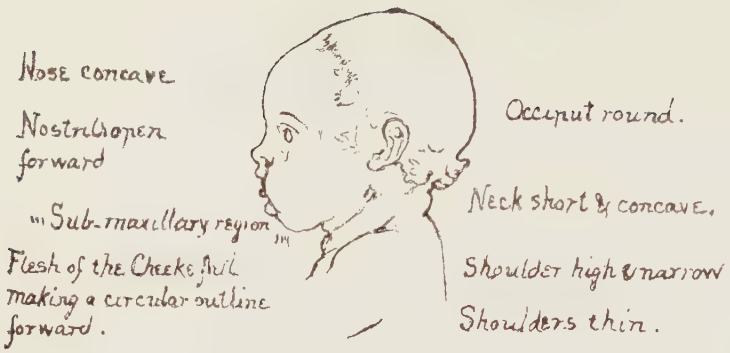
No. 8A
Plan showing the great circles of the Face.

Superficial Muscles of the Face

1. *Frontal portion of Occipito – Frontalis Muscle. The scalp is attached to this Muscle.*
2. *Occipital portion of the Occipito – Frontalis Muscle.*
3. *Articular Muscle of the Eyelid — Orbicularis Palpebrarum.*
4. *Pyramidalis Nasi.*
5. *Elevator of the Wing of the Nose and of the Upper Lip. Levator Labii Superioris — Alaeque Nasi.*
6. *Zygomaticus Minor.*
7. *Zygomaticus Major.*
8. *Proper Elevator of the Upper Lip — Levator Labii Superioris.*
9. *Compressor Nasi.*
10. *Orbicular Muscle of the Lips — Orbicularis Oris.*
11. *Risorius.*
12. *Masseter — Great Muscle of the Lower Jaw — Superficial portion.*
13. *Deep portion.*
14. *Depressor Anguli Oris.*
15. *Elevator of the Chin — Levator Menti.*
16. *Depressor Labii Inferioris.*
17. *Platysma Myoides — Muscle of the Skin. A broad thin plane of muscular fibres placed immediately beneath the skin on the side of the neck.*
18. *Sterno – Mastoid Muscle.*
19. *Trapezius Muscle.*
20. *Splenius Muscle.*
21. *Levator Anguli Scapulae.*
22. *Scalenus Posticus.*
23. *Parotid Gland.*

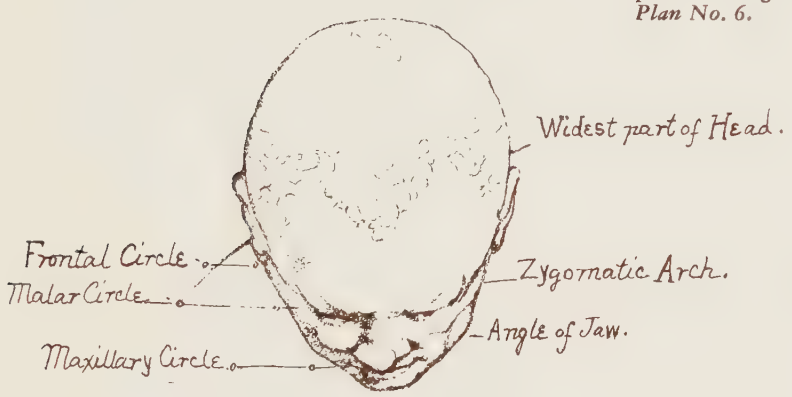


No. 9
Superficial Muscles of the Face

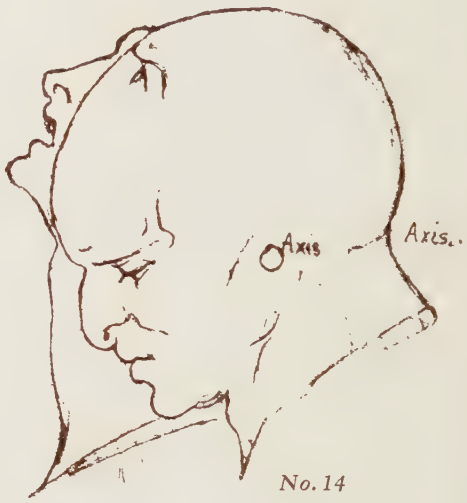


No. 10
Facial Section small; Cerbral Section large.

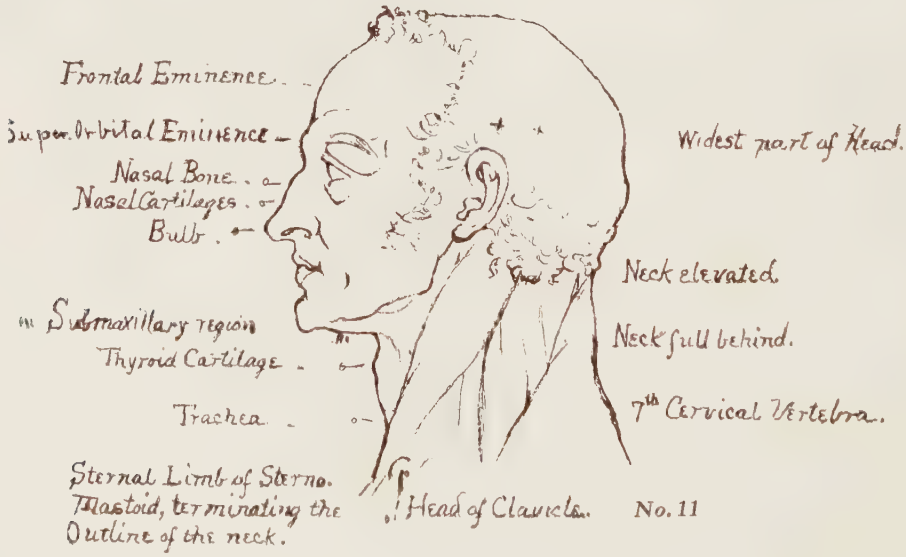
No. 13
Head an Egg-shaped oval
In this position the Cerebral portion of the Head is thrown back and lowered. The facial portion being elevated, is brought forward. See Plan No. 6.



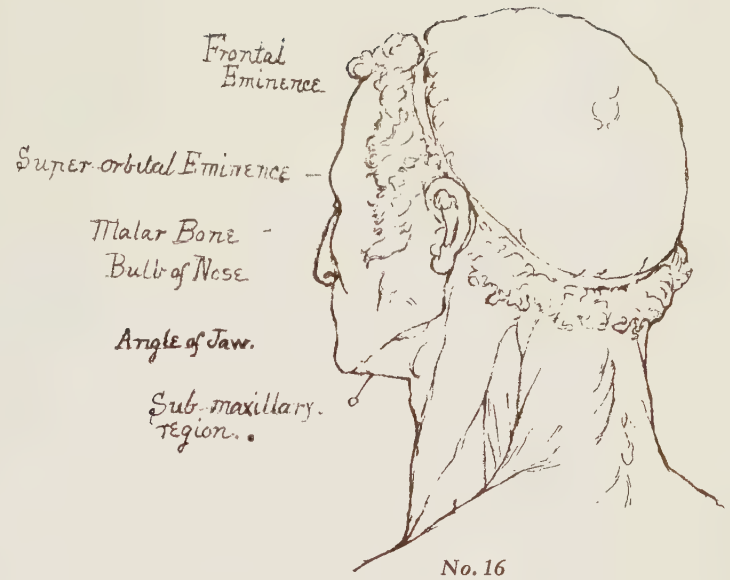
No. 12
Head an Egg-shaped oval
In this position, the Cerebral position of the head is brought into view. The Facial portion by being thrown under is obscured — the Bulb of the Nose covers the lips; the Malar Bones cover the Maxillary Planes; the Super-orbital Eminences cover the Eyes.



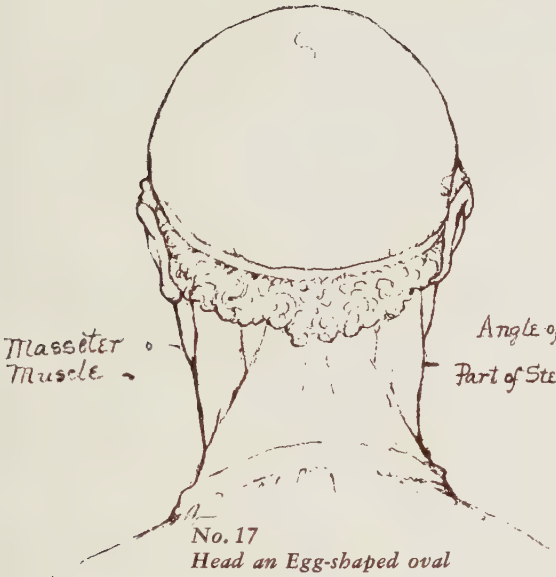
No. 14



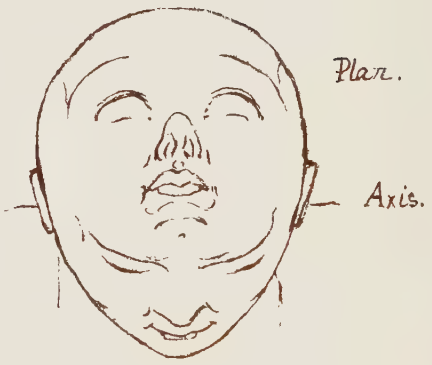
No. 11



No. 16
Head an Egg-shaped oval

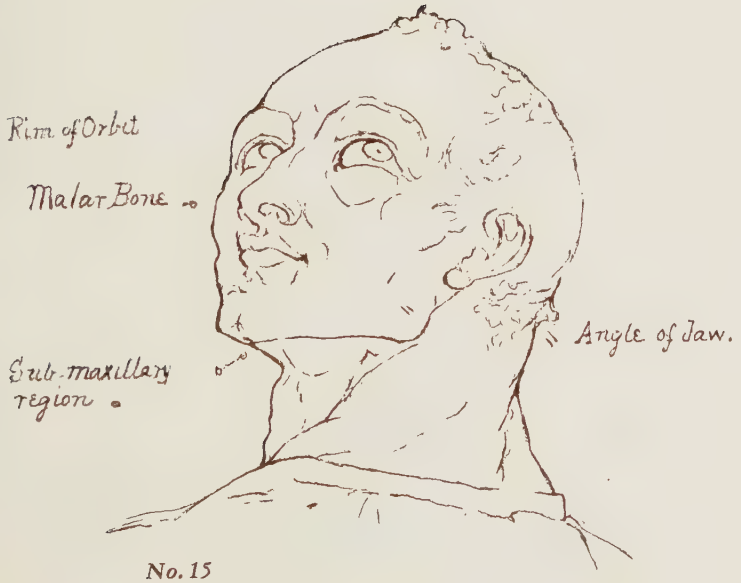


No. 17
Head an Egg-shaped oval

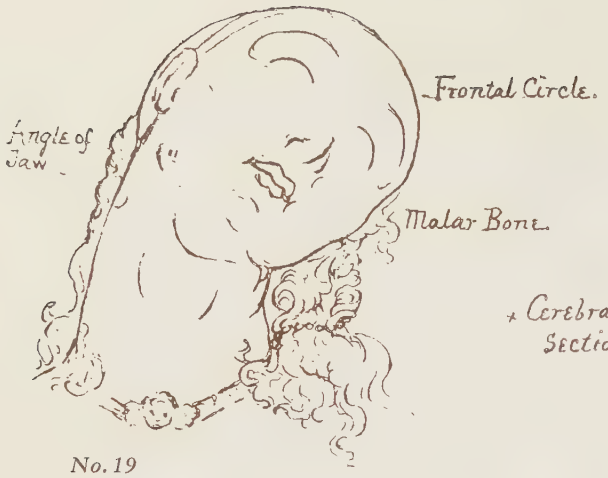


No. 18
Head, looking up or down, an Egg-shaped oval.
Find the circles.

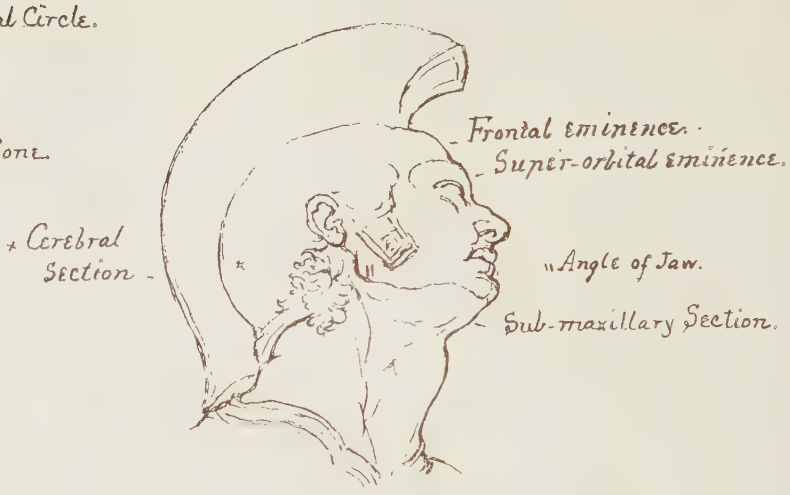
What is the form of the Head seen from above — below — from the side? What parts come into view as the Head is placed in different positions?



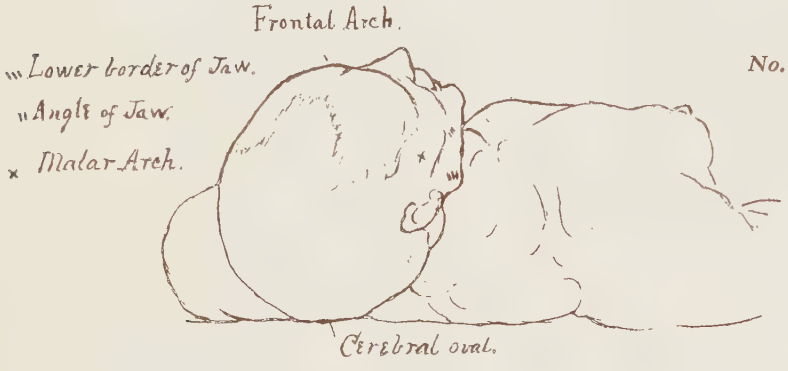
No. 15
Head an Egg-shaped oval



No. 19



No. 20

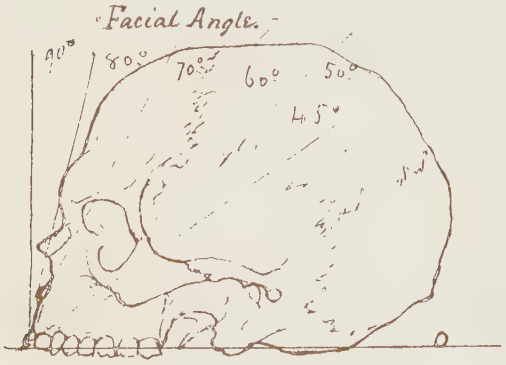


No. 21

No. 22

No. 23

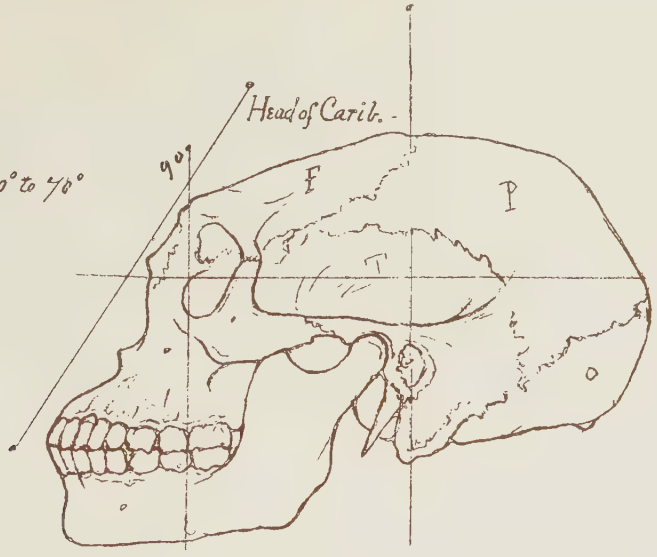
To find the Facial Angle, place the Skull on a horizontal plane and draw a line from the middle Incisor to the center of the Superorbital Eminence.



No. 23A

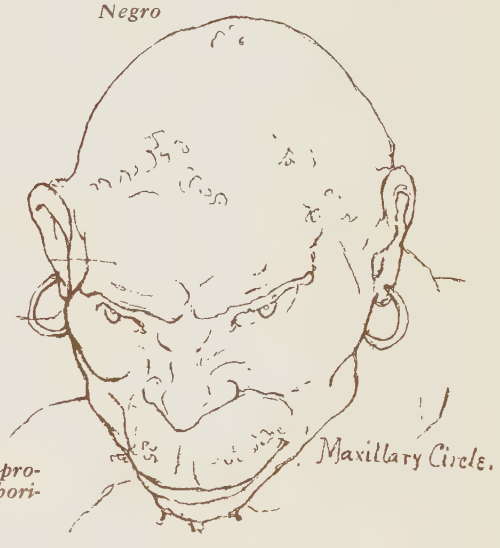
4 Incisors.—Middle Incisors large.

The first or milk teeth are 20 in number.
The second or adult teeth are 32 in number.



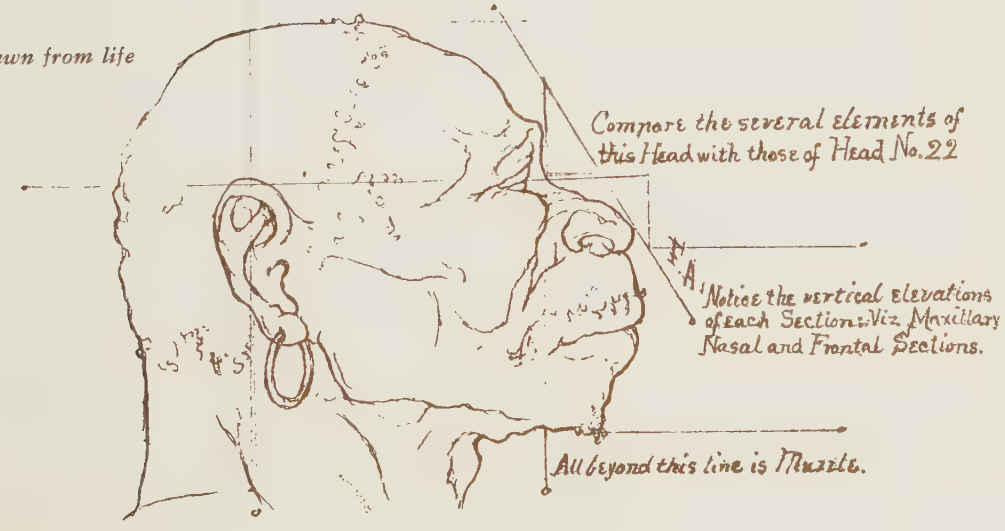
That part of the head situated behind the ear is called the occiput, that part situated in front, the sinciput. As the jaws advance the forehead recedes. The Axis of the facial angle is situated in the center of the supraorbital space between the tables of the skull as seen in No. 20. When the jaws project beyond the supraorbital eminence or vertical line marked 90° in figs. 22, 23, 24, they constitute what is called the Muzzle. See Heads marked 25 and 26.

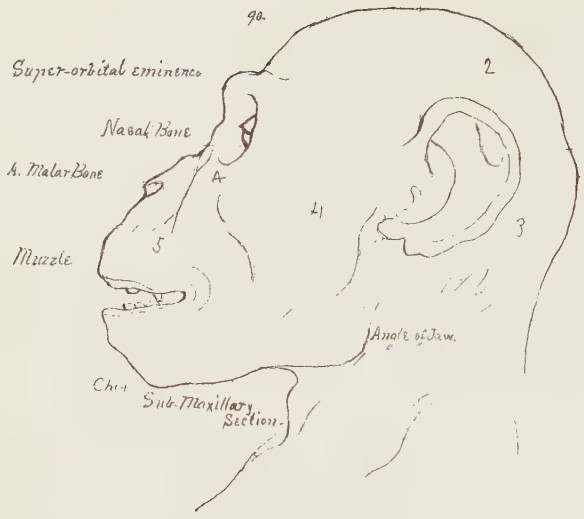
No. 25
Negro



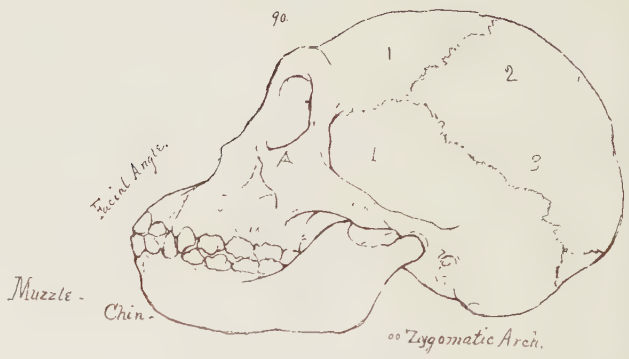
The human proportions are the vertical proportions, the animal proportions are the horizontal proportions.

No. 26
Negro drawn from life

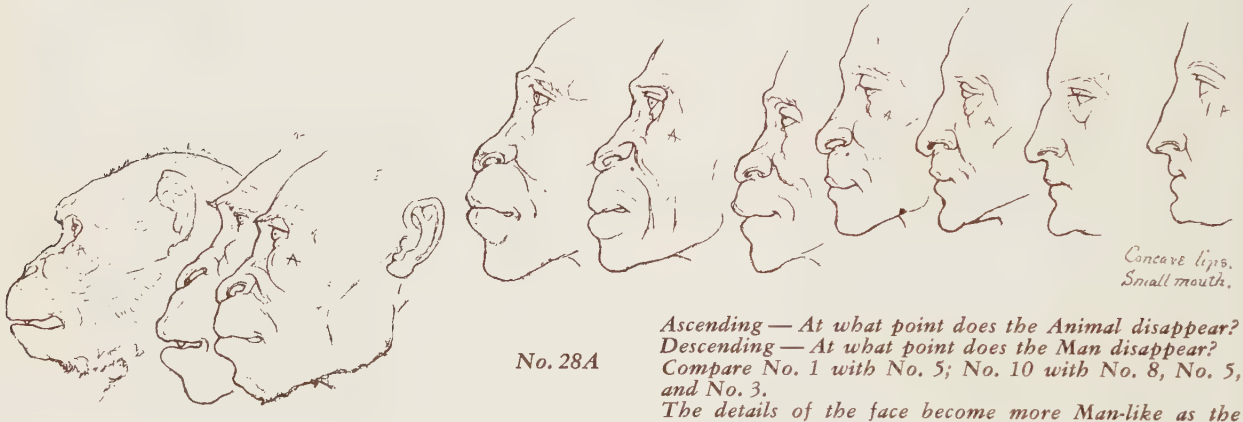

Compare the several elements of this Head with those of Head No. 22
N.A.
Notice the vertical elevations of each Section: Viz. Maxillary Nasal and Frontal Sections.
All beyond this line is Muzzle.



No. 28
Head of Chimpanzee

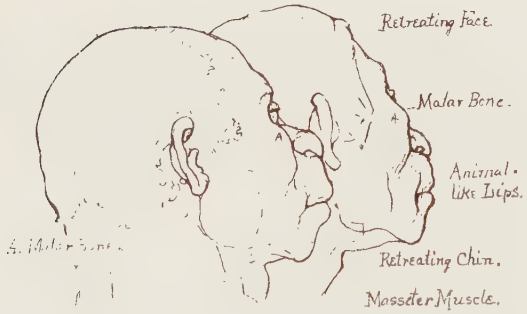


No. 27
Head of Chimpanzee



No. 28A

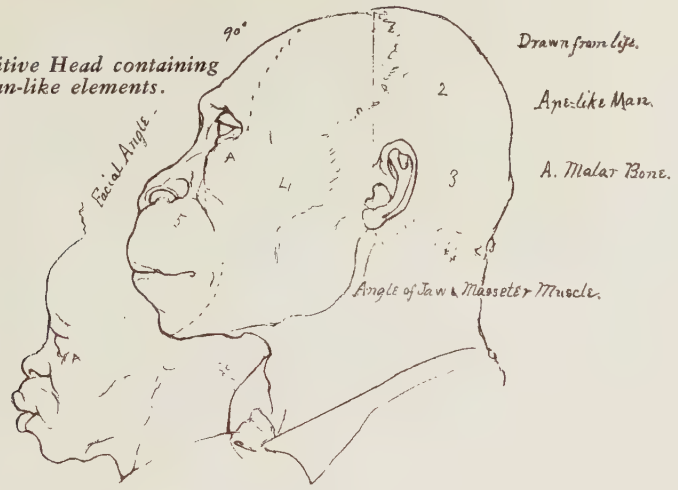
Ascending — At what point does the Animal disappear?
Descending — At what point does the Man disappear?
Compare No. 1 with No. 5; No. 10 with No. 8, No. 5, and No. 3.
The details of the face become more Man-like as the outline approaches the vertical.



No. 29
Part 1 and 2

No. 32A
Compare with No. 29 Part 1 and 2.

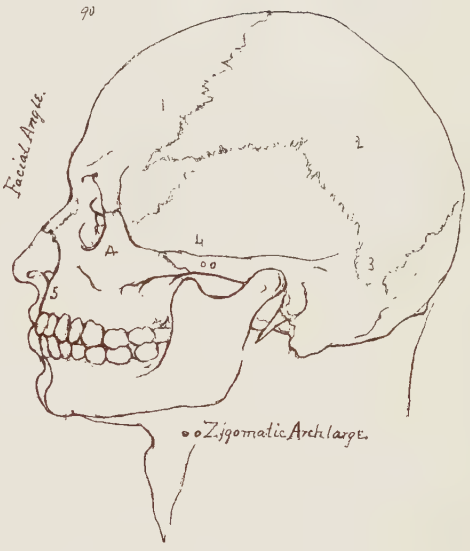
Primitive Head containing human-like elements.



No. 29A

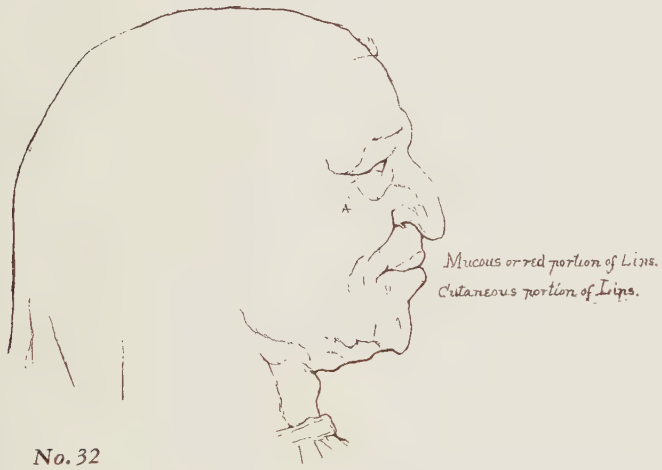
Ape-like man drawn from life.

Compare in this drawing the central portion of the Head with the Facial portion and the several Sections defined by the lines — each in the same Head with the other parts, and with other Heads in corresponding parts.



No. 30

Compare with Nos. 24 and 27.



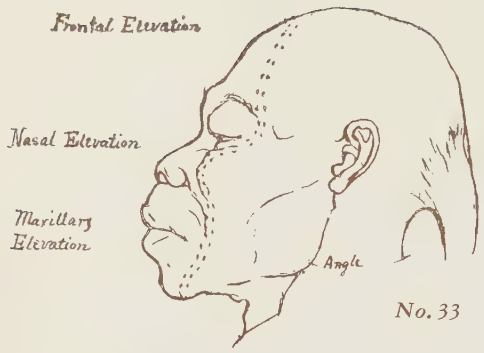
No. 32

Notice in these Heads the distance of the Malar Bone from the Nasal Bone. Notice, in Heads of Apes and of Ape-like Men, that in consequence of the great size of the Lips, the flesh of the Cheek is driven back upon the Malar Bone. Compare the Lips on Nos. 31 and 32, 20 and 22 with Lips in Nos. 25, 26, 28, and 29. Notice how great the distance from the Nose to the Chin in Heads 26 and 29. Compare with 31 and 32.

*Heads of the Animal type — Nos. 25, 26, 29, and 29 Part 1 and 2 are orderly heads, no part being less animal than another, the whole representing the race, character, disposition, and intellect of the person described.*Nos. 31 and 32 and Nos. 10-18 are orderly heads of the human type.*

No. 31

**Suppositional*



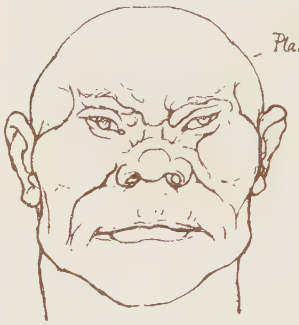
No. 33

Important. No intelligent idea of the head can be formed until the student has acquired a thorough knowledge of the Planes of the Face. The outline from the top of the forehead to the chin is the First Plane of the Face. A line drawn from the top of the forehead to the orbital cavity over the facial outline of the malar bone, behind the integument of the corner of the mouth to the corner of the chin (see dotted line No. 33), describes the Second Plane of the Face. Find the First and Second Planes in all the preceding heads. Compare them. Notice that as you ascend from the animal toward the human type, the areas of quantities are more and more inverted. See Plans W.W. In the animal-like head, the forehead retreats; the superorbital eminences are thin and projecting; the nasal bones flat, rising but little above the malar bones. The lips are large and projecting and the maxillary circle from the nose to the chin arches outward. The malar bones are large and press upon the orbital cavities, at the same time advancing the second Plane of the Face toward the nasal bone. The basilar edge of the jaw is long, the angles project laterally, the chin retreats, the eyes are small and usually elevated at the outer corners, the mouth is deep and the teeth large. This is a description of the First and Second Animal Planes. An inversion of these proportions is seen in all the higher type heads. Plans W.W. give the First and Second Planes of the human head, front view.

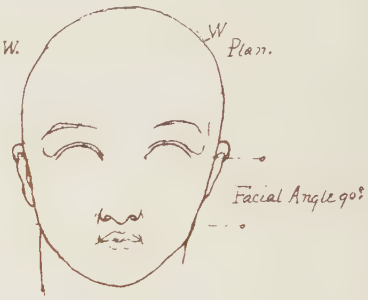
Size inverted
Proportion inverted
Expression inverted
Compare throughout.

Facial Angle 75°

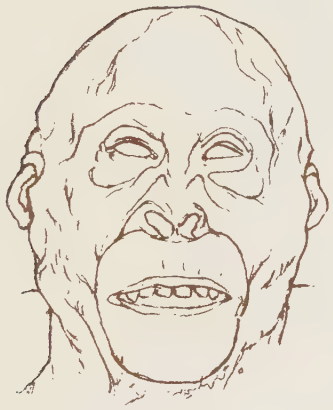
Angles of Jaws expanded laterally



No. 34



No. 35



No. 28A
Head of Ourang
Museum of Natural History, Boston, Mass.

Plan 1

No. 36
First Plane — Animal
Second Plane — Human

Plan 2.

No. 37
First Plane — Human
Second Plane — Animal

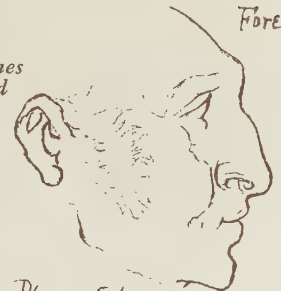
Notice how much a head is debased when the mouth and jaws are of the animal type. Compare Plans 2 & 4 with 1 & 3.

Plan 3.

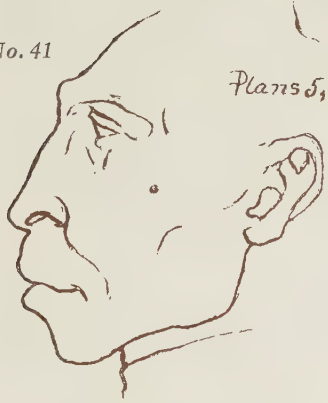
No. 38
Upper parts of First and Second Planes Animal.
Lower parts of First and Second Planes Human.

Plan 4

No. 39
Upper parts of First and Second Planes Human. Lower parts of First and Second Planes Animal-like.



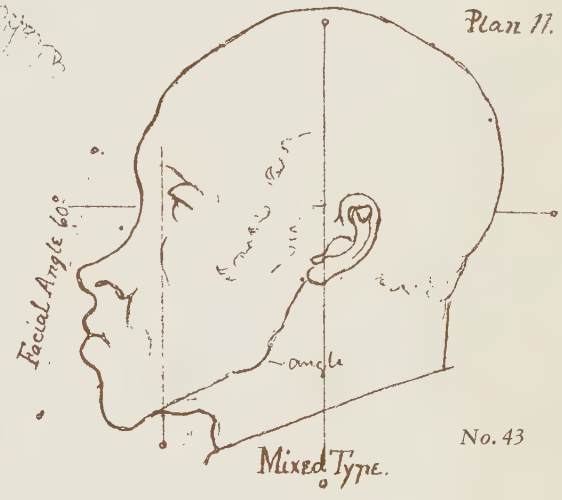
No. 40
First and Second Planes except in the Forehead Human.



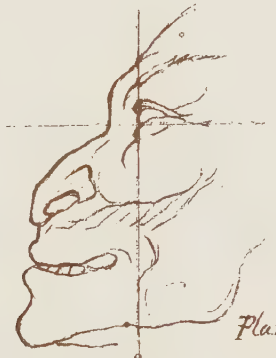
No. 41

Nasal Section of the First Plane Human. Upper and Lower Sections Animal. Second Plane Human as far as the mouth. Animal-like from mouth to chin.

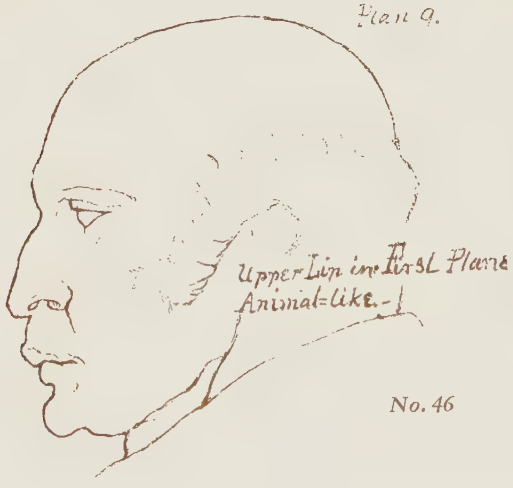
No. 42
Nasal Section of the First Plane Animal. First and Second Planes otherwise Human.



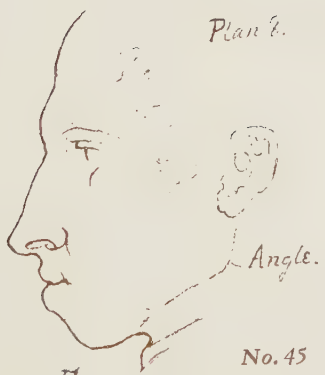
No. 43



No. 44 Mixed Type.



No. 46



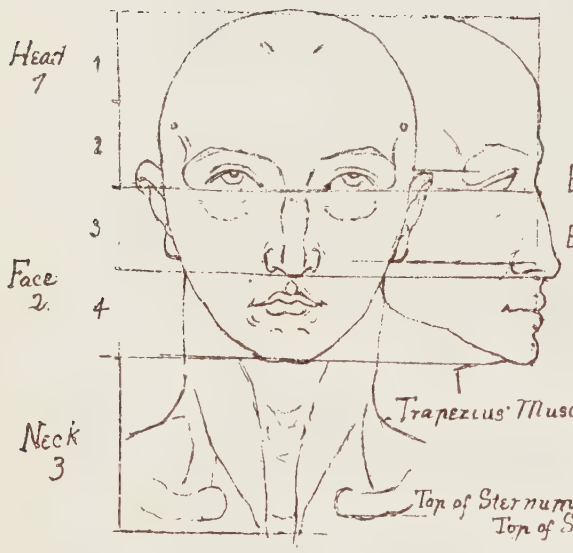
No. 45

Under Lip & Chin, First Plane, Animal.

As the head advances from the animal to the human form, the Planes of the Face separate; the outline becomes more erect and the quantities become inverted; See Plan W, 34 & 35 and head No. 28. The Planes of the Face in their numerous inter-relations describe both the physical and intellectual attributes of the individual. The skulls of men and of apes have the same structural peculiarities.*

*Suppositional

Head an Egg-shaped oval. Dividing the Head transversely into equal parts, the Eyes should be above the Median Lines: there should be the width of an Eye between the Eye and the Eyebrow; Eyebrow highest and widest over the outer third of the Eye; front Forehead terminating in the outer rim of the Orbital Circle; the length of an Eye between the Eyes; the Length of an Eye across the Wings of the Nose. The Mouth one half wider than the Nose; the Under Lip thicker than the Upper Lip. Dividing the lower or Maxillary fourth of the Head into five equal parts; two should be for the Cutaneous and Mucous Sections of the Upper Lip; and three for the Lower Lip, Cutaneous and Mucous Sections, and the Chin.



Eyes above the Median Line.

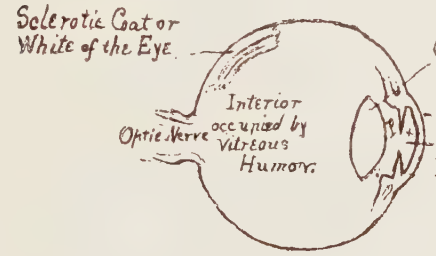
Ears from the angle of the Eyebrow to the Wing of the Nose — variable.

No. 47

Proportion of the Average Male Head.

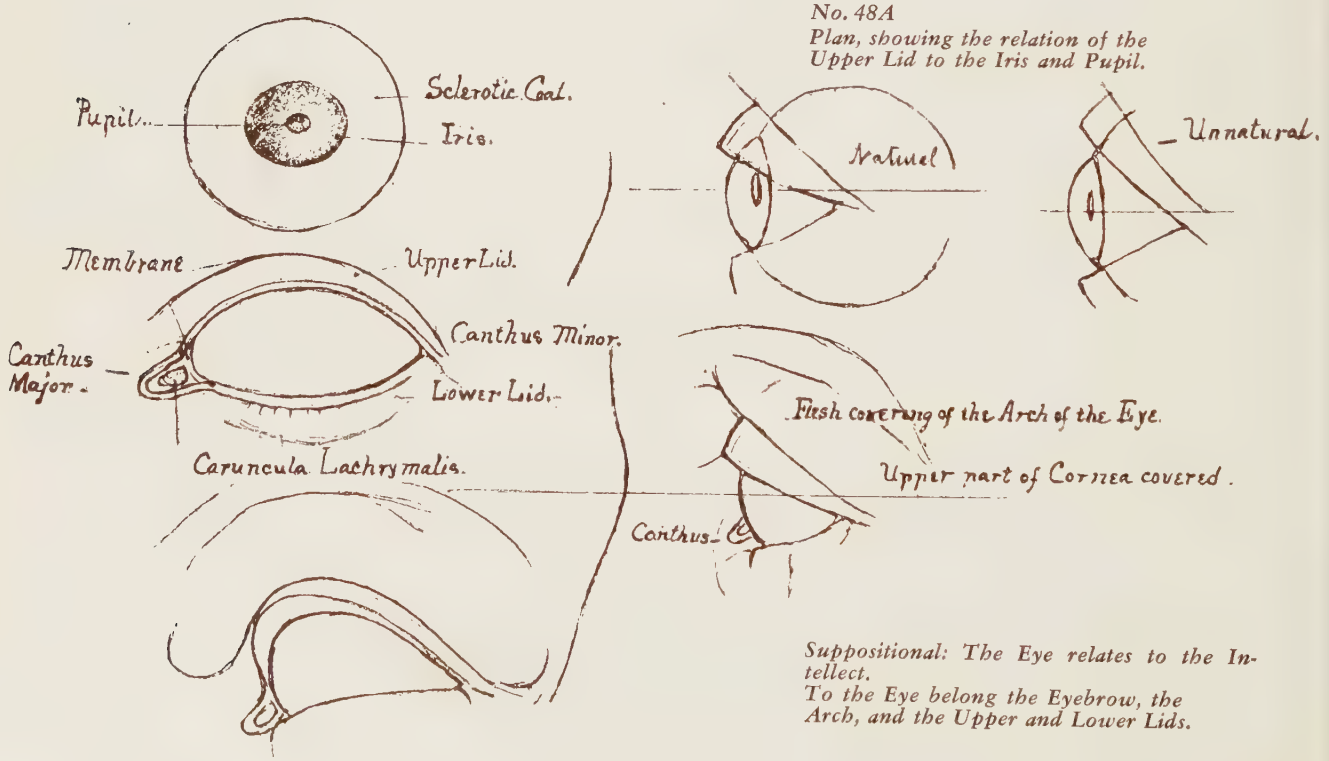
No. 48

Vertical Section of the Eyeball Notice that the Cornea projects beyond the common surface of the Globe of the Eye.


Sclerotic Coat or White of the Eye
Crystalline Lens
Interior occupied by Vitreous Humor.
Optic Nerve
Cornea transparent — the outer wall of the Anterior Chamber.
Pupil — the dark central spot.
Iris or colored circle of the Eye, — separates the Anterior, X, from the Posterior Chamber. P.

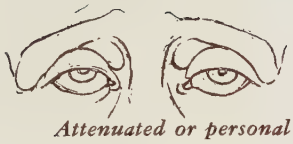
No. 48A

Plan, showing the relation of the Upper Lid to the Iris and Pupil.



Suppositional: The Eye relates to the Intellect.
To the Eye belong the Eyebrow, the Arch, and the Upper and Lower Lids.

Personal



Attenuated or personal

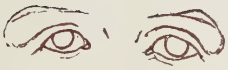
Eyes far apart

Eyes near together
Unartistic

Outer corners elevated — common

Small sight

Large sight



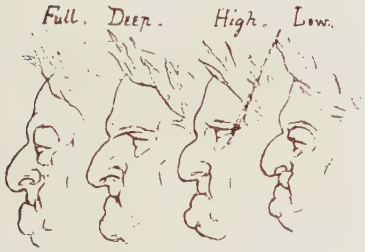
Outer corners depressed — uncommon
Open Eyes; large Iris; Iris usually gray, sometimes warm brown

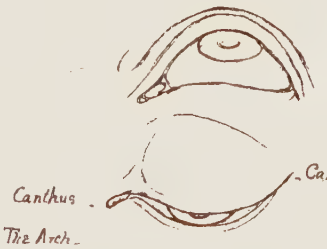
Individual peculiarity often American

Long Eyes; small Iris; Iris usually black; Scleratic Coat porcelain white or bilious yellow.

Individual peculiarity often Scotch and Irish

Compare

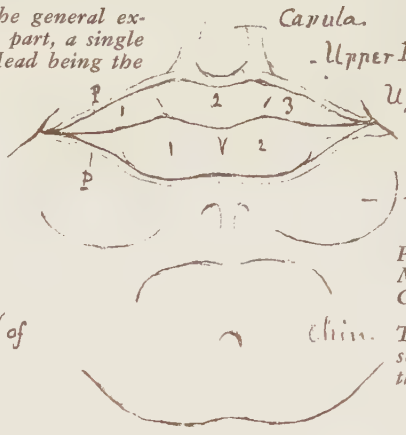




Eyelid arches over the Globe of the Eye. Notice the projection of the Cornea. In all cases the convexity of the Globe of the Eye must be described by the Lid.

Plan.

To show more clearly the change effected in the general expression by changing the form of an individual part, a single form of general outline has been adopted, the Head being the same in each Plan, Male and Female.



Fleshy Eminence or Pillar covering the corner of the Mouth.

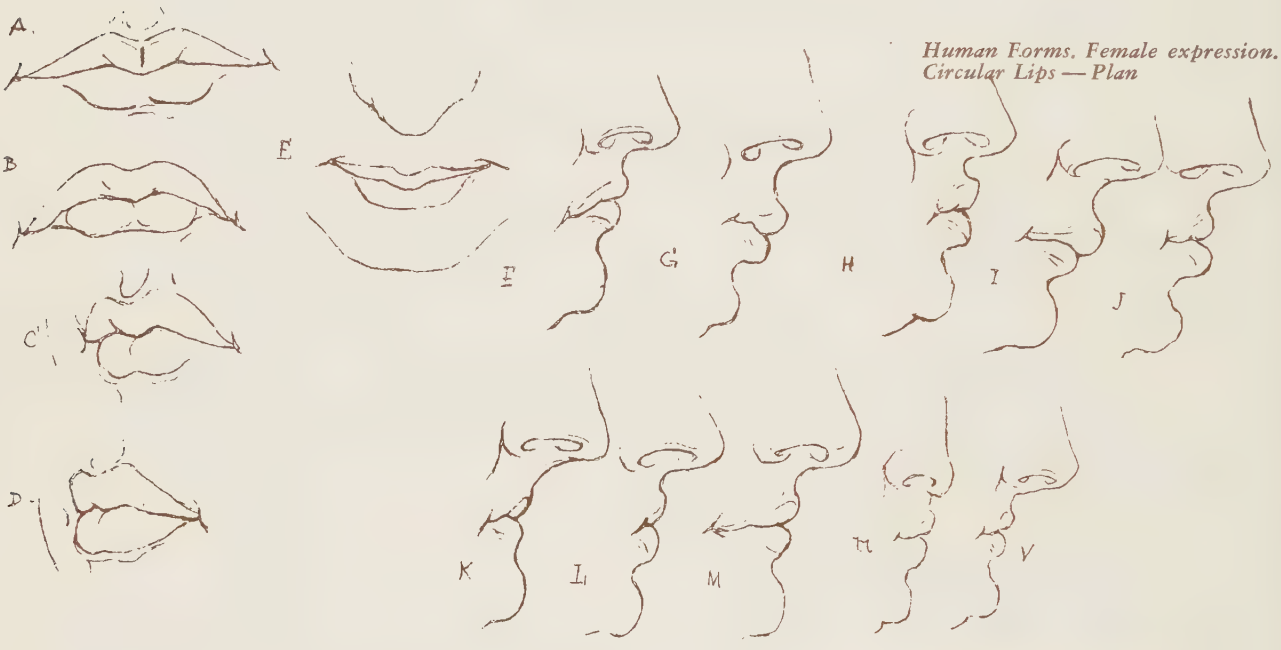
Mucous portion of Upper Lip, composed of three parts, viz: Body 2, and Wings 1–3.

Mucous Section of Under Lip, composed of two parts, viz: Right & Left Lobes.

P.P. Elevated edges separating the Mucous portion of the Lips from the Cutaneous portion.

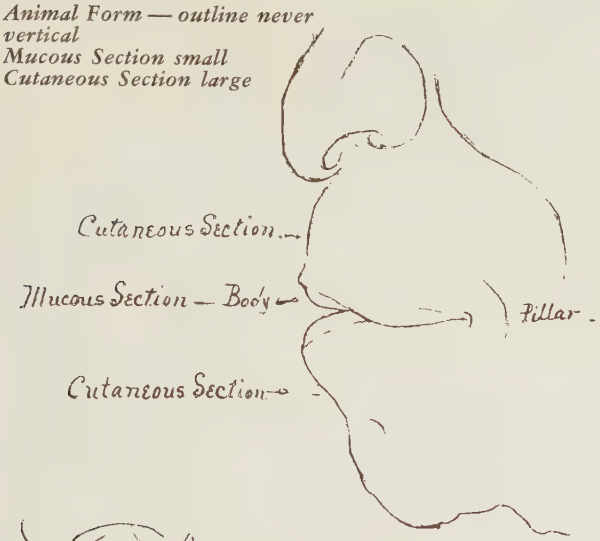
The Under Lip in the average Head, see No. 47, would be thicker than the Upper Lip.

Human Forms. Female expression. Circular Lips — Plan

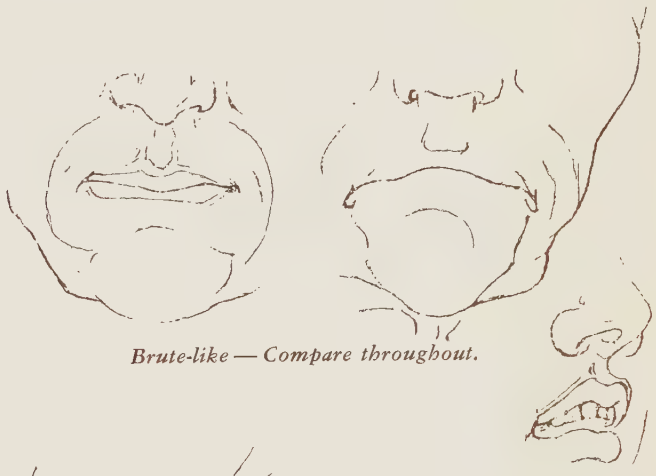


Small and Large Nasal projection

Animal Form — outline never vertical
Mucous Section small
Cutaneous Section large



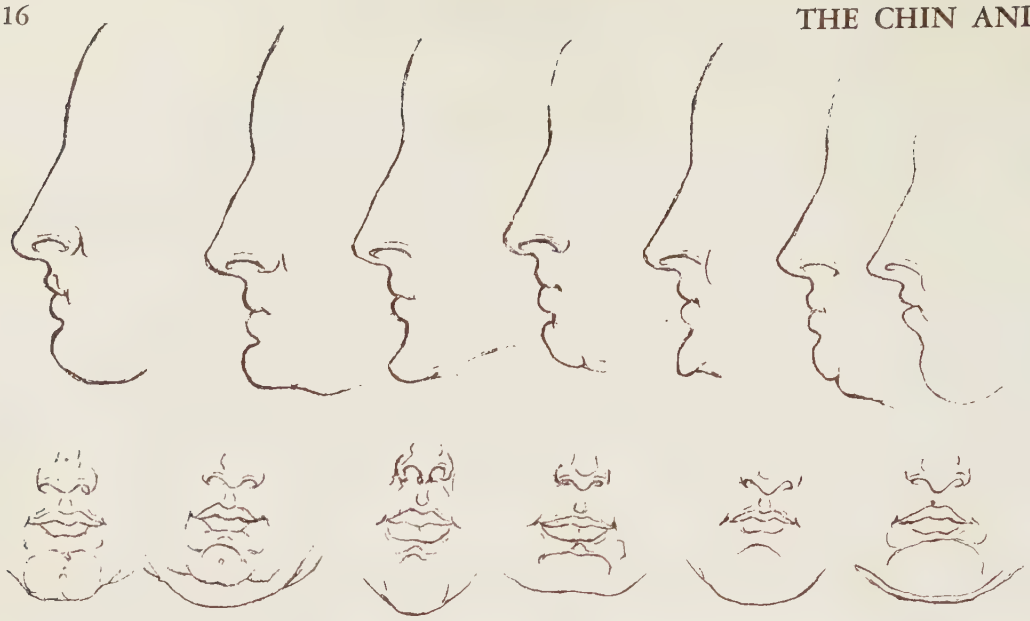
Unartistic.



Brute-like — Compare throughout.

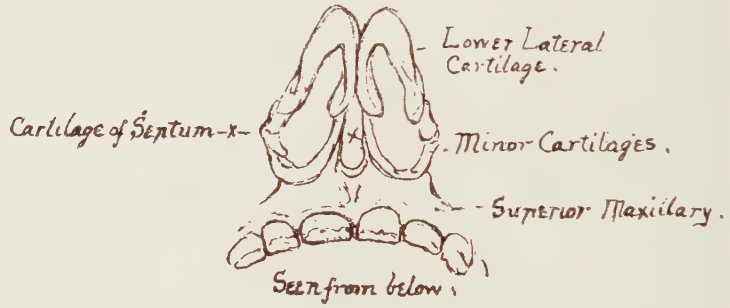
Animal Forms. Male expression. Compare throughout. When the Mouth, the Zygoma and the Jaws preponderate — the Nasal element being undeveloped — the Face is Maxillary.

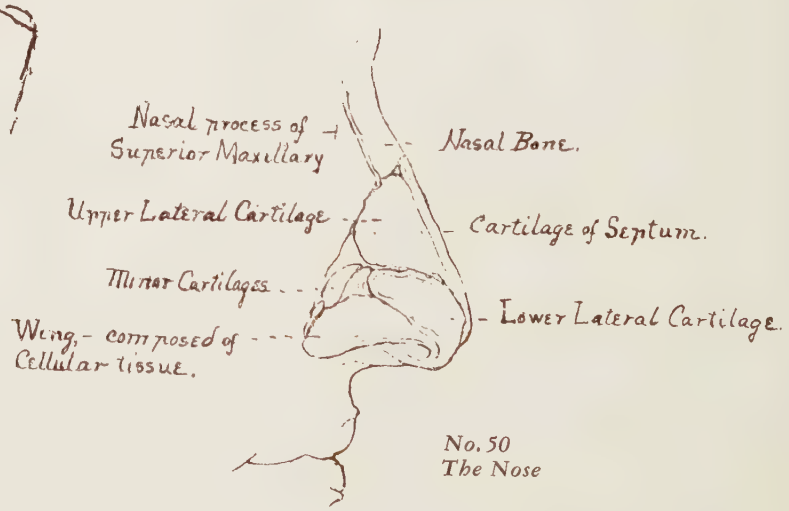
Suppositional: The Mouth relates to the animal passions and the appetites.



Small Chin.

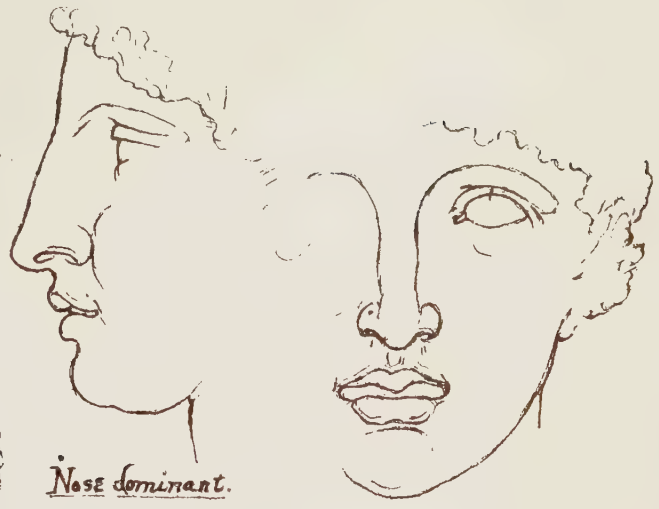
No. 50A
End of Nose seen from below
Find the Circles of the Face



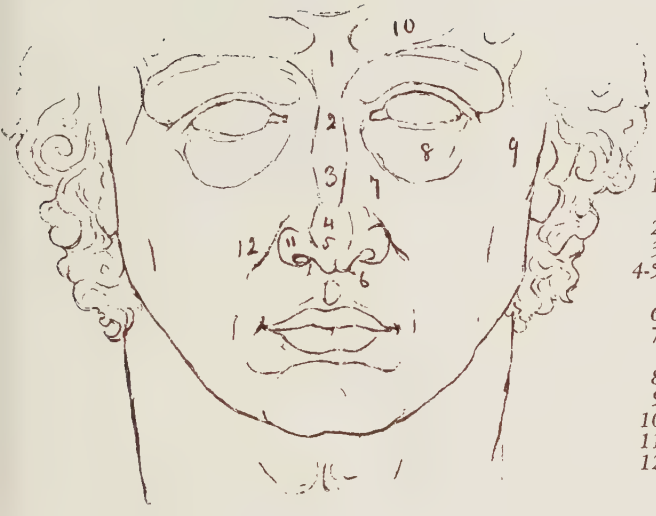


No. 50
The Nose

Eyes deep
Nose slightly concave
and Anatomical Sections
without expression.
Malar Bones small.
Orbital Arch thin.
Body of Lip angular.
Mucous Section of Wing flat.



Nose dominant.



1. *Nasal portion of Frontal bone — Frontal Section Nasal.*
2. *Nasal Bones.*
3. *Region of Upper Lateral Cartilage.*
4-5. *Upper and Lower Planes of Lower Lateral Cartilage.*
6. *Artistic Septum.*
7. *Isthmus or Plane connecting the Cheek with the Nose.*
8. *Orbital Integument.*
9. *Malar Bone.*
10. *Wing of Frontal Bone. See No. 8*
11. *Wing of Nose.*
12. *Maxillary border of Isthmus.*

No. 50B

Wing elevated. Wing depressed.

Long Cartilages.

Short Cartilages. Common.

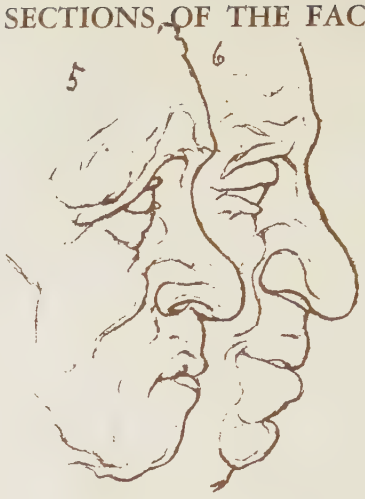
Angular Nostrils large.

Three quarters view.

When the Nose attains its highest development, the Maxillary or Appetital elements cease to govern the expression. The face is then Nasal. For Maxillary faces, see Nos. 33, 29, and 29 Parts 1 and 2. This statement applies to Heads of orderly relations only. Mixed forms describe mixed peculiarities of character.

1. *Small Upper Cartilages.*
2. *Short Frontal Section.*

3. *Large Nasal Bones; Large Upper and Lower Cartilages.*
4. *Frontal Section very large; Nasal Bones large — uncommon.*



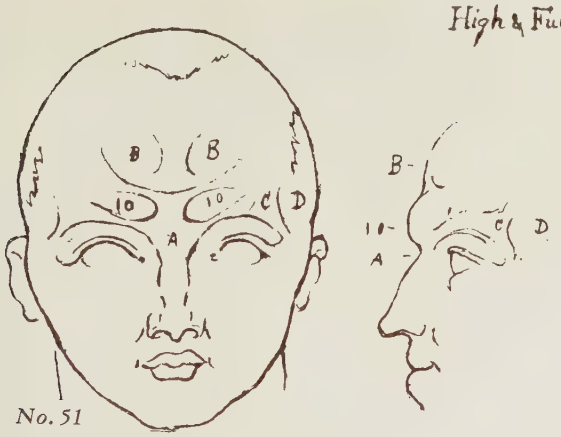
5. *Frontal Section and Nasal Bones small; Lower Cartilages large; Wings narrow.*
6. *Lower Cartilages very large; Nose bulbous; Wings large.*

Compare.

Contradictory — common

A high Nose is seldom found in a Face of the Animal type.

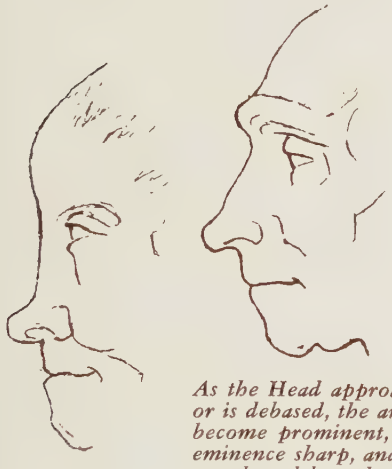
See Nasal Sections generally.



No. 51

10. *Wings — Superciliary Ridges, Super-orbital Eminences.*
A. *Frontal portion of Nasal Section.*
B. *Frontal Eminence — Right and Left Lobes.*
C. *External angular process — Pillar.*
D. *Temporal Cavity.*

High & Full Forehead. —



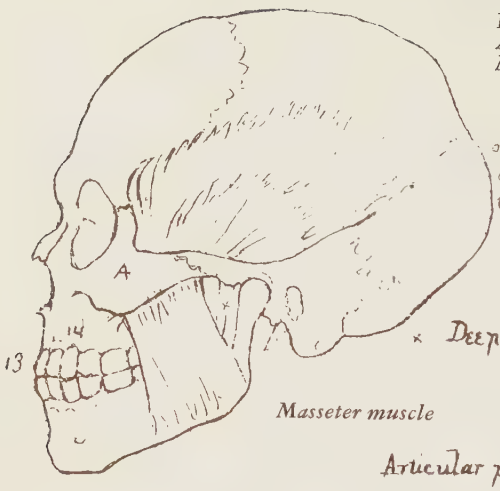
As the Head approaches the Animal form, or is debased, the angular processes become prominent, the Super-orbital eminence sharp, and the whole Forehead rough and bony-looking.

Animal.
Facial Angle 70°

Flat Forehead. Square Forehead. Circular Forehead. Angular Forehead.

Frontal Eminence small. A retreating Chin well formed often accompanies a high Nose.

Suppositional: The Forehead above the Eyebrows is an element of proportion only. The Frontal Outline may be in advance of, over, and behind the Facial Line. See Nos. 33 to 40 and Nos. 58 to 73.

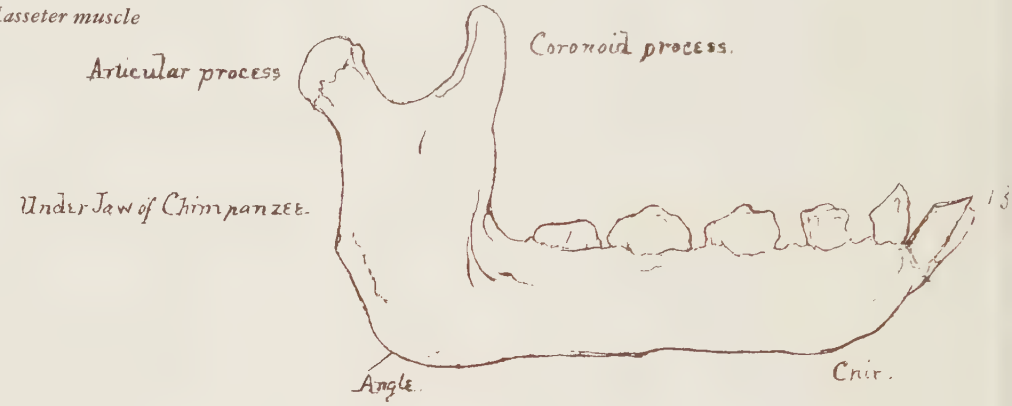


No. 52
Articular process
Masseter Muscle, superficial portion attached to the underborder of the Zygomatic Arch and to the Angle of the Jaw, and to more or less of the inferior border as the Jaws are more or less powerful.

a. Temporal Muscle, attached to the Coronoid process.

A. Malar Bone.

x Deep portion.



Compare the size of the Zygomatic Arch with the size of the whole Head. Make the same comparison with the following Heads.

1. *Malar Bone.*
2. *Zygomatic process of Temporal Bone.*
3. *Line of connection — This form of union is never inverted and is representative of the commonness of structure of vertebrates generally. It is sometimes absent.*

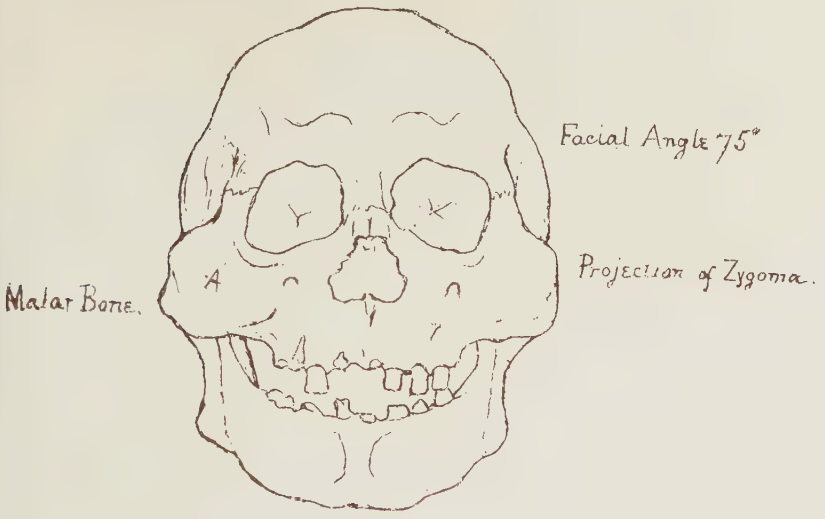
1-2. *Zygomatic Arch.*

4. *Orbital Cavity opening into the Temporal Cavity.*
   A. The partition wall separating these parts in Man and the Apes and Quadrumana generally being undeveloped, as are the outer portions of the Orbital Arch, in this animal.
   C-D. The Orbital Chamber, incomplete.

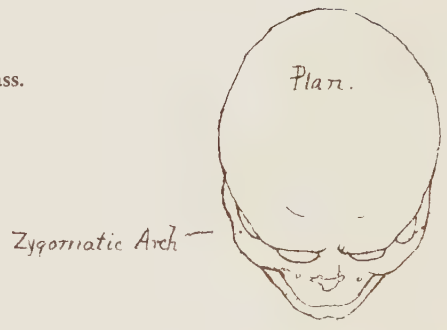
5-6. *Superior and Inferior Maxillary Bones.*

7. *Coronoid process of Inferior Maxillary. Compare with Skulls of Men and of Apes in previous Sections.*
8. *Angle of Jaw.*
9. *Auditory Cavity.*
10. *Bony Ridge for the attachment of the Temporal Muscle. See Nos. 52 and 56. Compare.*
11. *Nasal Cavity.*
12. *Nasal Bone.*
13. *Incisors — Six in number.*
14. *Canines. The Canine Teeth in Animals of this class are used both as instruments of destruction and prehension.*
15. *Occipital Bone — Nos. 53, 56; with certain variations in the size and form of individual parts, this is the representative form of Carnivorous Animals generally.*

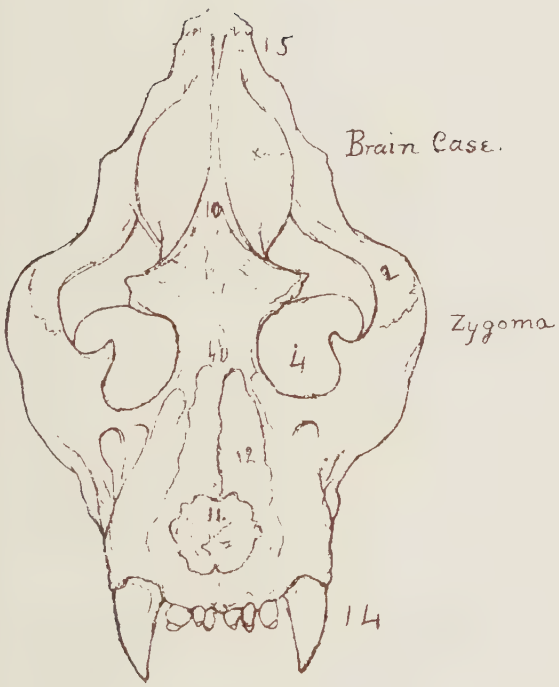
Important — The Size of the Masseter Muscle is in direct proportion to the length and strength of the Jaw.



No. 54
Skull of California Indian
Museum of Natural History, Boston, Mass.

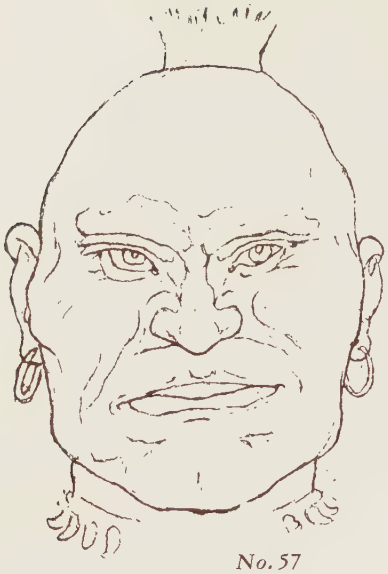


Compare with No. 56.

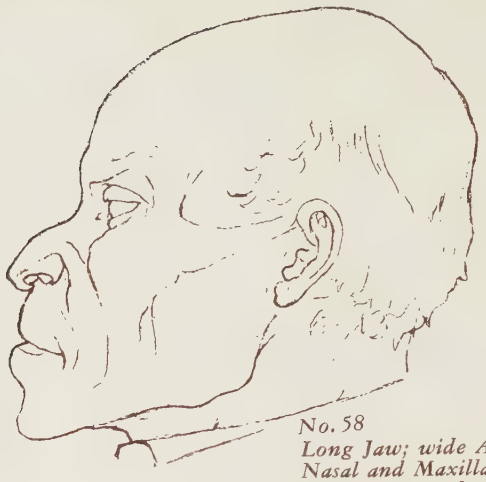


No. 56
Skull of Lion
seen from above three quarters

No. 55
Skull of Anglo-American
Compare with Skulls of Lions and Apes.



No. 57
Head square
Oval irregular

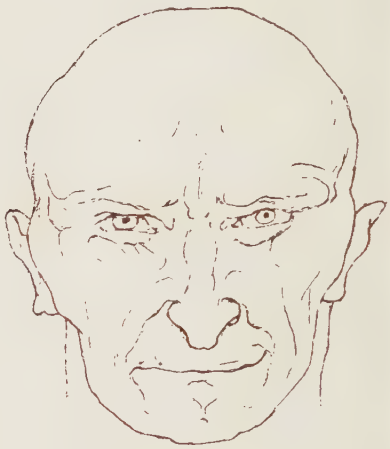


No. 58
Long Jaw; wide Arch; protruding Nasal and Maxillary Sections; Zygoma strongly marked; Cheeks flat.

No. 59
High Malar Bone
Masseter Muscle large

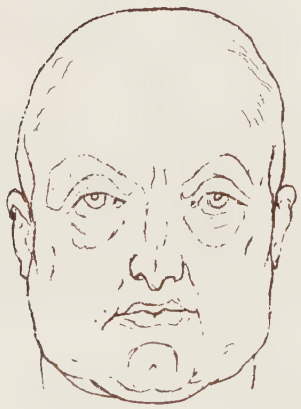
Malar Bone

No. 62
Broad Malar Bone; Zygoma prominent. Personal.



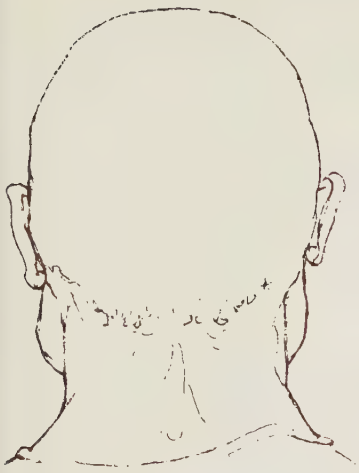
No. 60
High Zygoma; large Malar Bone; deep Jaws; carvernous Cheeks

No. 63
Malar Section low & broad



No. 61
Small Zygoma; small Malar Bone; fleshy Cheeks & Chin.

No. 61A



No. 64
Oval irregular — Animal Form

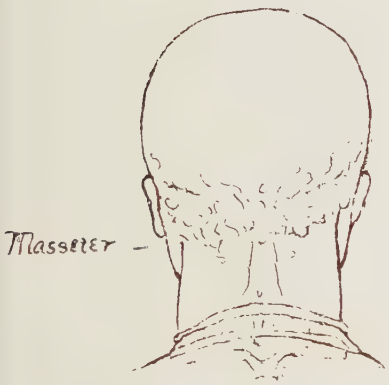
Compare

No. 68
Sharp Malar Bone.
Form of Brow & Nose denoting resistance.

No. 66
Broad Malar Bones

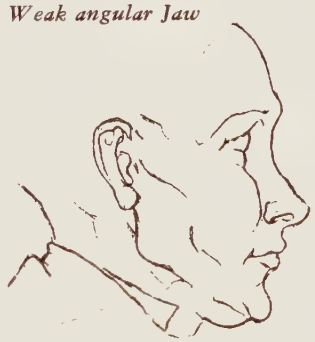
No. 67
Narrow Malar Bone

When the Malar Bones are large, the Forehead is usually low, and the Brow thin. A fine Brow is seldom found in a Head in which the Jaws are coarse or Animal-like. No Head, however, is so finely formed that, being fully developed, it represents only the Spiritual in Art. It should not be forgotten that within the limits of the highest type many forms are possible — as many as there are intellectual graces or physical beauties. In describing the several passions, it should be remembered that a thoroughly Animal-like Head is a subject unfit for artistic representation.

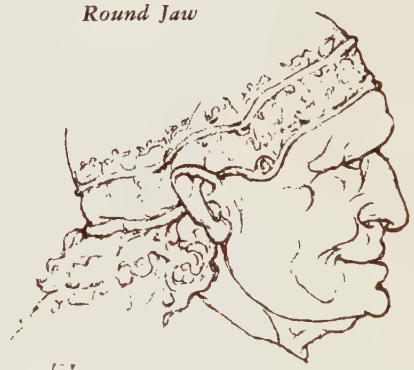


No. 65
Oval regular — Human Form

No. 70
Weak angular Jaw

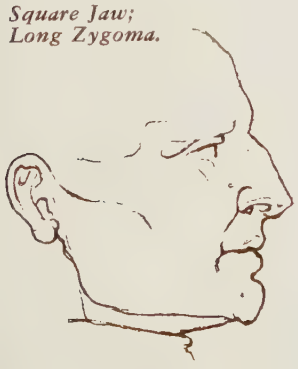


No. 69
Round Jaw



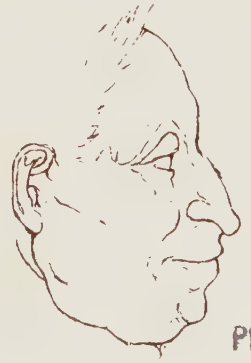
Form of Lower Face.

No. 71
Square Jaw;
Long Zygoma.



No. 73
Concave Jaw;
Short Zygoma.

No. 72
Short Zygoma;
Fleshy Jaw.



No. 73A

For Female form, see Chin section.
The jaws of women are seldom strong or strongly marked.
Men gesticulate less than women.

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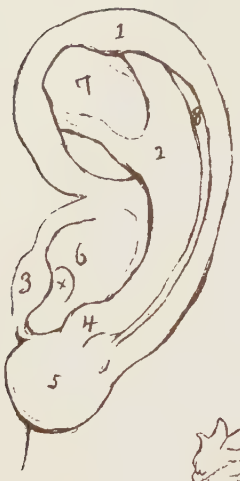


No. 74
Side view
1. *Helix, or Outer Rim*
2. *Antihelix, or Inner Rim*
3. *Tragus*
4. *Antitragus*
5. *Lobe*
6. *Concha, or Cavity*
7. *Fossa, or Cavity of the Antihelix*
8. *Cavity of the Helix*
   The Lobe rests upon the Cheek

X. Auditory Passage

No. 76
Front view

No. 75
Back view
1. *Helix*
5. *Lobe*
6. *Concha*

V. Mastoid process of Temporal Bone
W. Neck
O. Cheek

No. 77
Compare with No. 74.

No. 78

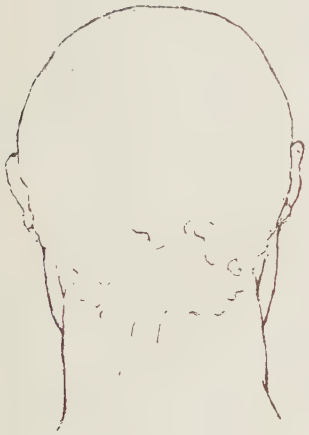
No. 80
Ear high: Brain small.
How may the Cerebro-facial proportions of an orderly Head be inverted?

No. 79
The Ear in an orderly Head of average proportions should be slightly toward the Occiput, looking at the Brow.

No. 81
Ears low; Brain large.
The Auditory passage is at the base of the Skull. When the Ear is high, the Ramus of the Jaw will be long. When it is low, the Ramus will be short.

No. 82
Ears far back; deep Face; small Occiput. How may the Occipito-Frontal proportions of an orderly Face be inverted?

No. 83
Ears in the middle of the Head
Small Face



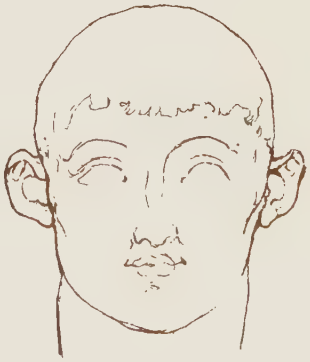
No. 84
Proper position
See No. 79.

Compare

No. 85
Ears high

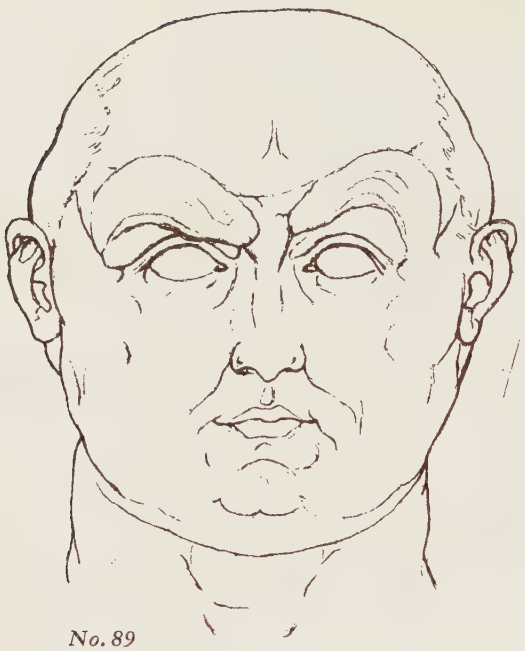
No. 86
Animal-like

No. 87
Lobes projecting

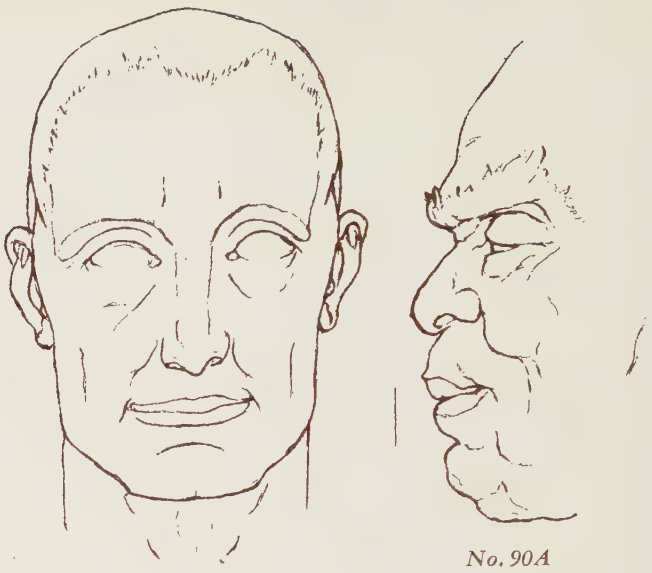


No. 88
Helix projecting

Suppositional: The Ear is an element of proportion only. When the Ears are coarse, the Hands and Feet are coarse. When the Ear is well made, the Hands and Feet are well made.



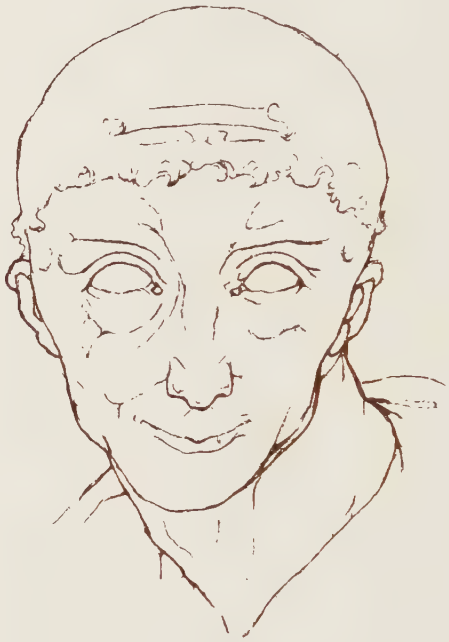
No. 89
Small Features; broad Head.



No. 90
Large Features; narrow Head.

No. 90A
Large Features

No. 91
Narrow Cranium;
Broad Face.



No. 92
Large Cranium; small Face; long Neck.

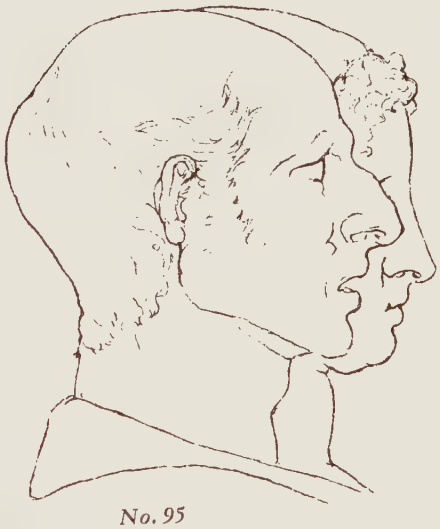
No. 92A
Oriental Head, nearly circular.

It should be noticed in reference to its artistic uses that the size of the Head relates rather to the perfection and activity of the whole Physical Economy than to the Intellect. The size of the Brain has no special connection with the strength of the understanding, other than as described above. The Cerebral part of the Head is an element of proportion only, and without the facial part is meaningless. Any covering may hide the Head above the Brow without greatly changing the expression of the Face. When the Forehead is covered, the Planes of the Face determine the Character.

No. 93
Occipito-Frontal or Animal proportions small. Neck small, anatomical; concave behind.

No. 94
Occipito-Frontal or Animal proportions large. Neck large and muscular; convex behind, nearly even with the Occiput. Occiput small; Throat far from the Chin.

No. 97
Long Neck



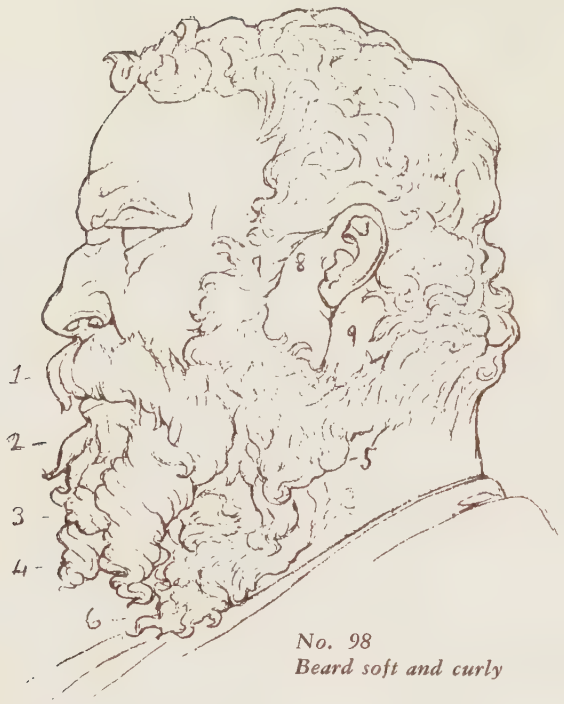
No. 95
High Occiput; Neck fleshy; erect behind; deep Occiput; Neck under the middle of the Head; Throat near the Chin.

No. 96A
Thin Features

No. 97A
Neck under the Occiput; Throat far from the Chin.

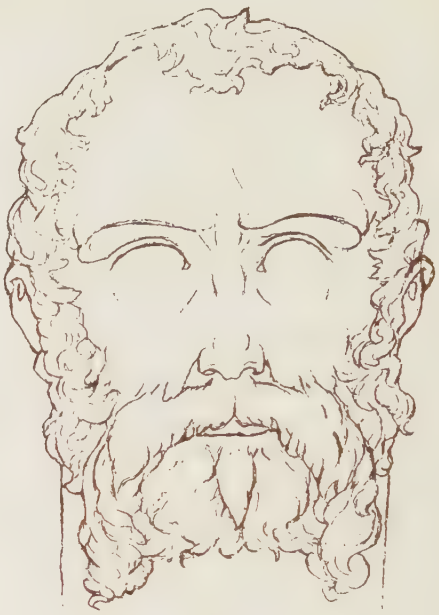
No. 96
Round Head; Short Neck.

Suppositional: Men of great muscular vitality usually have large Necks and round, deep Heads. See No. 94. Persons of small nervous vitality usually have anatomical Necks and high Heads. See Nos. 93 and 90. Northern races have large features — often large and square Malar Bones — without debasement.



No. 98
Beard soft and curly

From life,
Natural form.



No. 99
Corner Lock, Chin Locks.

1. The Beard of the upper Lip passing downward and backward, describing the Maxillary Arch, and enclosing the Beard of the Chin. 2. The central Lock of the under Lip. 3. Beard of the Chin. 4. The Beard of the sides of the Chin — Chin Locks. 5. Beard of the Angle of the Jaw. 6. Beard of the Throat. 7. Beard of the Cheek. 8. Open space between the Beard of the Cheek and the Angle of the Jaw. 9. Open space behind the Angle of the Jaw. The Hair of the Angle does not always join the Hair of the Occiput as here described.

Strong, curly Hair usually denotes a strong Constitution. Heads of the highest type in both planes have generally soft, curly, or waving Hair. A coarse, thin Beard is seldom found when both Planes are of the highest type. The Beard of the upper Lip is harder than the Beard of the Cheek. The lower the Race, the coarser the Beard. A few coarse Hairs on the edge of the Lip marks one kind of Animal proportion. Women are seldom bald, Men often. Women are seldom gray, Men often.

No. 100
Compare with No. 98.
Exceptional

No. 101
Thin, hard Beard
Coarse, straight Hair

No. 102
Hair straight, coarse, and abundant — Animal texture. Beard coarse and abundant — quality same as the Hair on the Head.
Compare with Nos. 98, 99, 104, & 107.

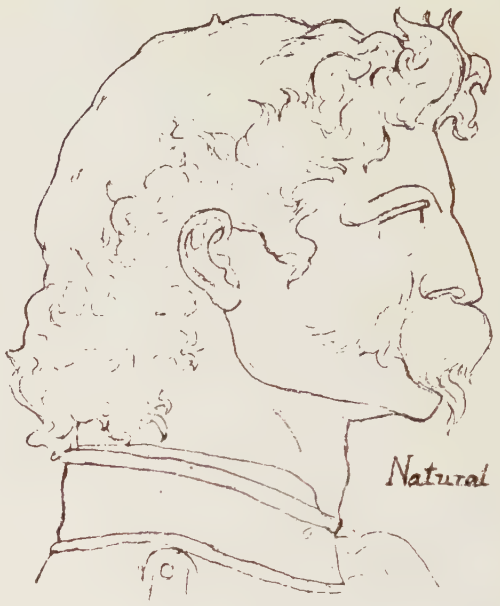
No. 68A
Head of Negro — from life.

No. 103
Thin Hair
Strong Beard
Baldness: Masculine form
Contradictory. Monstrous.

Suppositional: The Beard and Hair relate to the Physical Constitution.

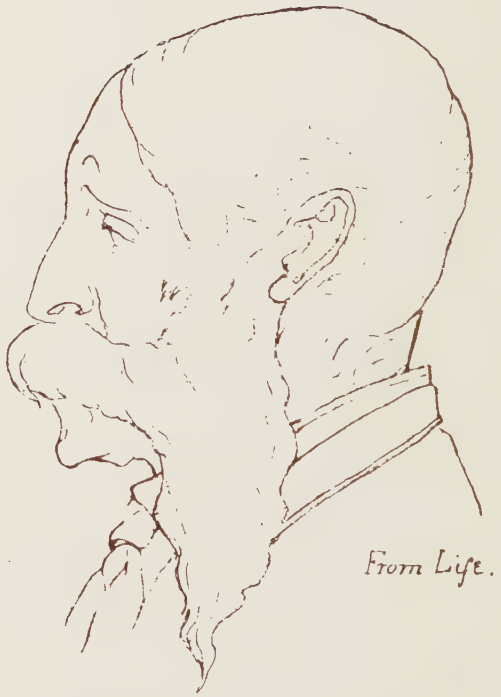
No. 104
A natural form of Beard — found only where the Jaw is large and deep; generally where the Occipito-Frontal Elements preponderate. Beards in Heads of other forms are often made to resemble what is natural in this by shaving the Cheeks.
It should be noticed here that every artificial form of Beard has its antitype in nature.

Compare

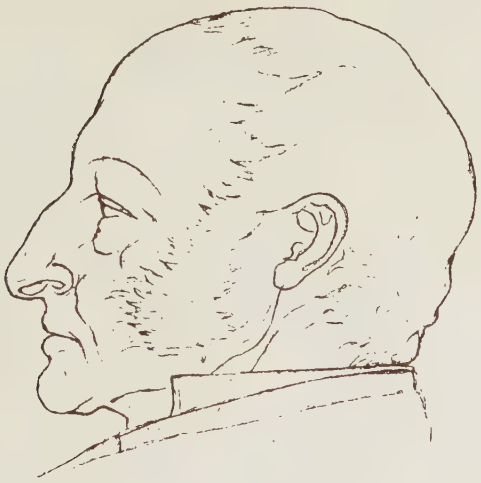


No. 105
In some Heads, the lines of the Beard conform to the lines of the Planes of the Face. Compare No. 104 with No. 105.

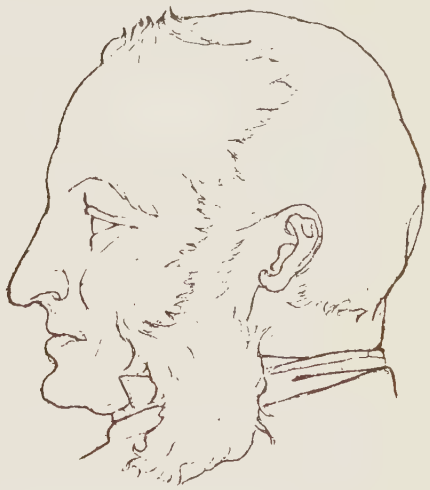
No. 104A
Small Frontal Section
Low Forehead



No. 106
A weak Face may be further weakened by the disposition of the Hair and Beard.

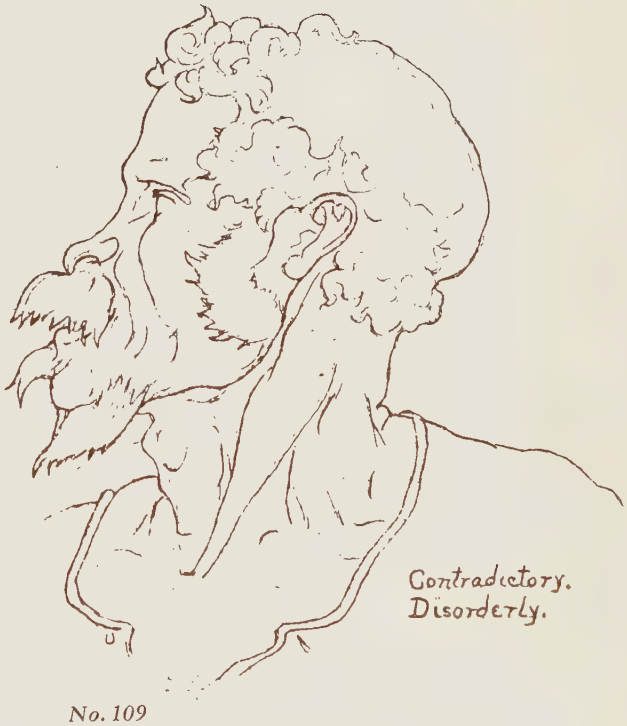


No. 107
The Beard may hide the Features, but can never dominate in the expression of an intellectual Head. Compare with Nos. 104, 105, and 106.



No. 107A
Beard of the Angle of the Jaw
Large Frontal Section
High Forehead

No. 108
The Hair of the Head sometimes extends over the Frontal Section almost to the Brows. A low Forehead is a Forehead in which the Frontal Section is small. When the Forehead is much covered, the Planes of the Face determine its character.



No. 109

Proportionate to the size of the Frontal Section, the naked portion is rather larger in Men than Women. See Heads of Women.

Orderly.

No. 111

No. 114

No. 112
Orderly.

No. 110
Orderly.

Orderly. No. 113

Every order of Primitive form has its proper circle of Secondary forms.

Artificial.
Disorderly.
No. 115

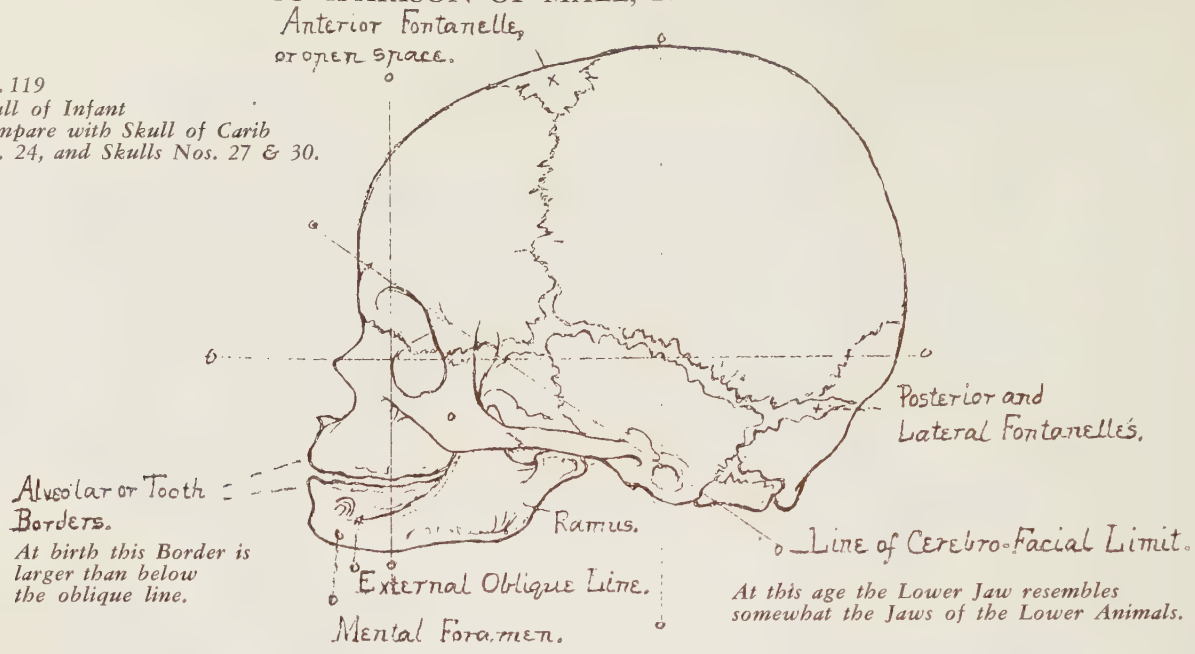
Masculine.
Disorderly.
No. 116

No. 117

No. 118

As it becomes necessary in representing Female Heads to make special disposition of the Hair, to gather it up without affectation in some natural form of support suited to the shape of the Face is all that is required. Nothing can exceed the beauty of the natural outline of a well-formed Head. It should never be altogether obscured, nor its natural proportions defaced.

Suppositional: The vices and virtues of personal character stand in closest relation to the vices and virtues of personal ornamenture.

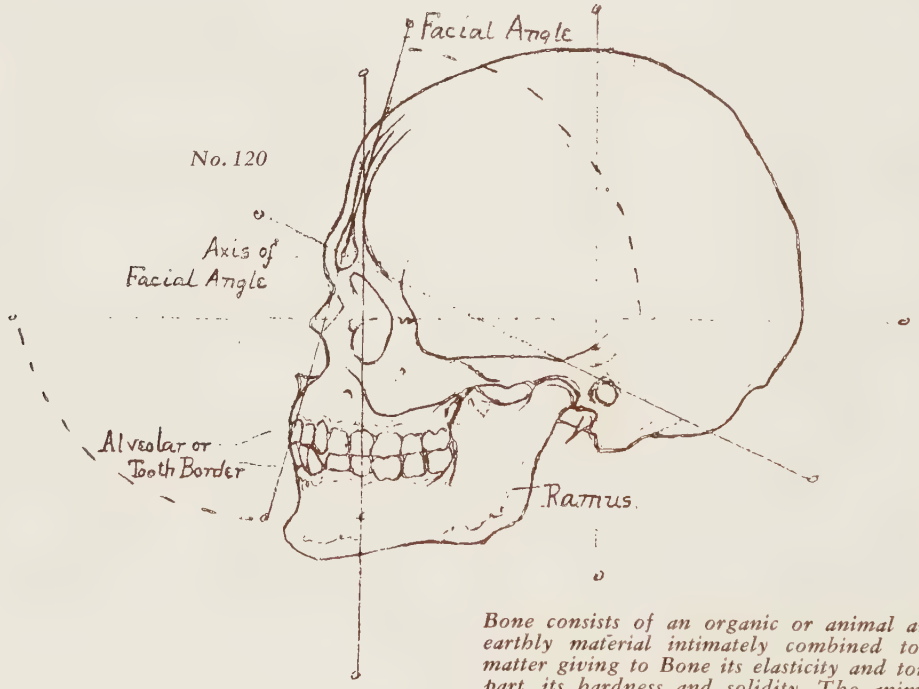


No. 119
Skull of Infant
Compare with Skull of Carib No. 24, and Skulls Nos. 27 & 30.

At birth this Border is larger than below the oblique line.

At this age the Lower Jaw resembles somewhat the Jaws of the Lower Animals.

Notice that the Head of the Child differs from the Head of he adult Male in being longer in proportion to its height; in having a larger Cerebral Section in proportion to the size of the whole Head; in having larger Orbital Cavities, thinner Malar Bones, narrower Jaws, and a large Occiput. Notice that the shallowness of the Jaws is partly due to the absence of Teeth in, and partly to the smallness of, the Ramus. Notice that the distance from the center of the Orbital Cavity to the Chin is much less in proportion to the height and depth of the Cerebral Section than in the Adult.

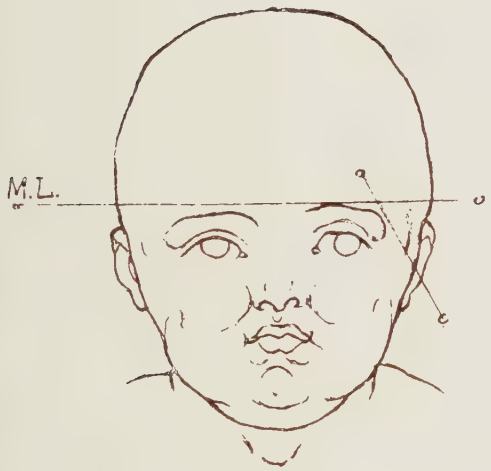


No. 120

Bone consists of an organic or animal and an inorganic or earthly material intimately combined together; the animal matter giving to Bone its elasticity and toughness, the earthly part, its hardness and solidity. The animal matter is a substance closely resembling Cartilage, but differs from it in being softer and more flexible and in being resolvable under proper conditions into a substance almost entirely gelatinous. In very early Infancy the Bones are largely cartilaginous. The increase of Bones in height and breadth terminates when the several pieces of which they are each composed are united. As the Bones advance toward maturity, they become harder and larger by the gradual increase of inorganic substances. In the Aged, it is not uncommon to find the Bones thin and translucent and often extremely brittle.

No. 122
Compare

Cerebral Section large; Ear low; Eye large; Nasal Bone flat; Nose small; Nostril opening forward — line ascending from upper Lip to the end of the Nose. Low Frontal Section. Frontal Eminence only. Concave Nasal outline. Eyebrow generally elevated. Cheek pressing more or less forward over the Maxillary Section. Chin small. Sub-Maxillary Section fleshy. Cheek pendulous. Mouth small. Under Lip small. Neck short. Back flat. Shoulder high, with protruding Occiput.



No. 121
Eyes below the Median Line. See No. 47.
Facial Oval small below.

In early Infancy the Table of the Cranium is composed of a single Plate only. As this rests immediately upon the surface of the Brain, the Frontal portion of the Brain being circular, the Frontal Section possesses but one Eminence. As development goes on, the outer or Cutaneous Table is at length fully separated from the inner or Vitreous Table. The Super-orbital Eminence then appears as in No. 120 — there being in the Adult Male Head a complete separation of the inner and outer Plates of the Skull at the point here described. The Frontal Section then has two Eminences, viz.: Frontal Eminence and Super-orbital Eminence.

In early Infancy the Bones and Muscles are alike rudimentary and incomplete. The nutrient portions of the general economy have a greater activity and compose a larger portion of the general Bulk than the mechanical portions. The Bones and Muscles are covered by a thick, fatty Integument which conforms in its growth to the natural muscular outline of the Adult Body. The Legs are shorter in proportion to the whole height than in the Adult; Head larger; Hands and Feet smaller; Abdomen fuller; etc.

No. 123
Integument full; showing the form, framework of the Head.

Compare the Areas of the Infant Head with the Areas of the Adult Animal Head. See Nos. 28 and 28a, Brute form; Nos. 25, 26, 29, 33, and 58, Human Form. The Facial Angle, in representing a particular structural peculiarity, represents at the same time all other peculiarities naturally related to it. In passing from the Adult Animal to the Adult Human Form, the Jaws recede more and more toward the vertical or Facial Angle 90°, and become smaller throughout; the Nasal Bones advance; the Malar Bones recede; the Zygomatic Arch from its relation to the Inferior Maxillary Bone becomes shorter; the Ear descends, and the Chin advances. Meanwhile, the Cerebral Section increases in size from the Ear upward and backward, and from the Eye upward and forward; the Brain increasing and advancing, and the Jaws receding and diminishing, till the vertical is attained. The Head is composed chiefly of two parts, the Cerebral and Maxillary — the one representing the Intellectual and Nervous forces, the other the Animal Appetites and the Physical Forces.

Compare.

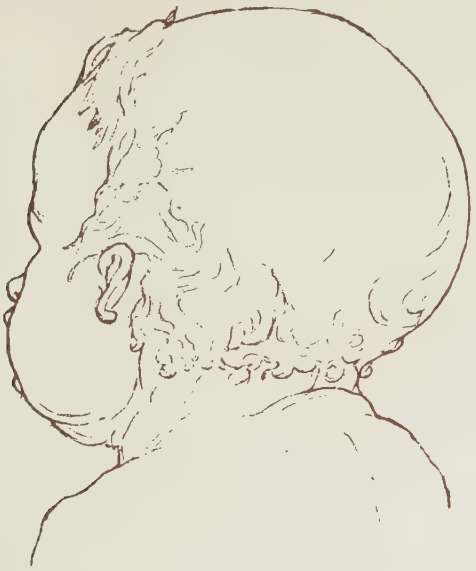
No. 124
Integument full; showing the form, proportion, and direction of the First and Second Planes of the Face in the average Infant Head.

Describing the Infant Head, see general remarks under Heads 119, 120, 121, 122.

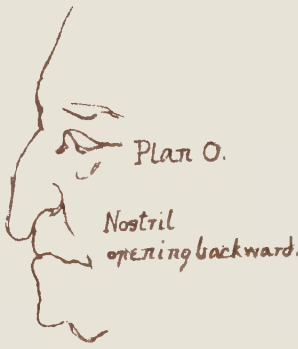
1st. The same preponderance of the Cerebral over the Maxillary and of its Nutrient and Integumentary Elements over the Osseous and Muscular that characterizes the Infant Man characterizes the Infant State of all other Mammiferous Animals.

2nd. In consequence of the greater size of the Cerebral Section in proportion to the Facial Section in Infant Heads in the lower races of Men when compared with their Adult Heads, the Infant and Female Heads of these races (See Heads of Females) resemble the Adult Heads of the higher races more than do their Adult Heads.

3rd. The ascent from the Infant Form is toward the physical perfection of the Adult form, whatever that may be, and is mainly in reversed order to that of the ascent of the Animal Form toward the Ideal Human Form as above described: viz., the Jaws increase in size throughout; the Frontal Eminence recedes; the Super-orbital Eminence advances; the Bulb of the Nose descends; the Nostrils open downward and often backward (See Plan O); the Malar Bone advances; the Zygoma widens and lengthens; the Eyes become smaller, and the Bony Arch more prominent; the External Angular Process more prominent; the Occiput descends and becomes smaller in proportion to other parts; the Ears higher; the back of the Neck fuller and the Mouth larger. In these changes the Integumentary details of Form give place to the Muscular and Bony details; the Nasal Bones advance and the Forehead heightens and becomes broader — more or less — as distinctive elements of masculine proportion. See Heads of Women.



No. 126
General outline Form—three-quarters view from behind. Large Occiput. Integumentary Cheek. Short Neck.



No. 125
Three-quarters view: average outline and Facial details. Low Frontal Section. Integumentary Sub-Maxillary Section. Small Nose, Mouth, and Chin. Integumentary Cheek. Protruding Upper Lip. Line of the Pillars of the Mouth commencing with the lower Line of the Cheek.

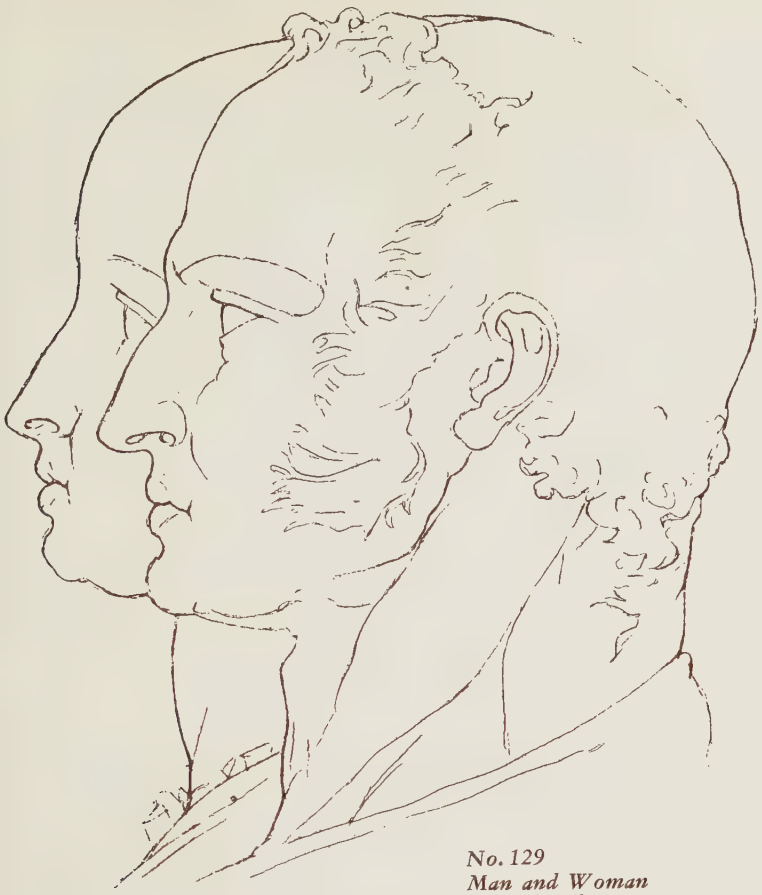
No. 125A

No. 127

No. 128
Woman and Child
Same family

Cerebral Section large; Facial Section small; Nose elevated; Chin and Mouth small; Ear low; Occiput prominent; Neck concave; Lips short and fleshy; Sub-maxillary Section fleshy; Nostril opening forward; Frontal Eminence large; Super-orbital Eminence small; Face Integumentary throughout. With the naming of the parts, compare the Male, Female, and Infant outline. From Frontal Eminence to end of Nose generally concave. In Female Heads the Nose lengthens more rapidly than it increases in height.

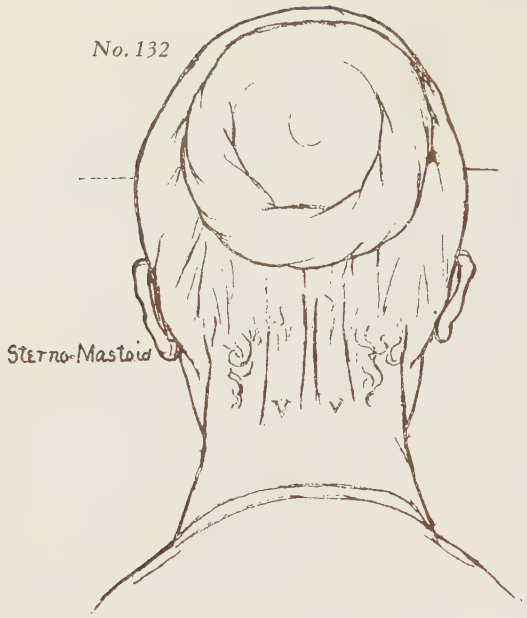
The Bones and Muscles of Women being generally smaller and less compact in structure than the Bones and Muscles of Men, the rudimentary relations of childhood in some degree remain with them. Compared with the fully developed Male proportions, they are as follows, viz., the Cerebral Section is larger in proportion to the Facial Section; the Malar Bones are farther back and narrower; the Ears lower; the Nasal Bones less prominent; the Nose thinner; the Mouth smaller; the Maxillary portion of the Isthmus farther forward as in Children; the Mucous portion of the lips fuller; the Cutaneous portion shorter; the Chin less prominent; the end of the Nose more elevated; the Eyes larger; the Angular Process of the Frontal Section smaller; the Forehead more prominent; the Frontal Eminence fuller; the Super-orbital Eminence smaller; the Forehead narrower and lower at the top; the Head wider through the center of the Brain over the Ears; narrower through at the Ears; the Occiput more prominent — the whole Head in both Planes showing the preponderance of the Cerebral over the Facial at the representative period of Feminine Life. Compare with that of the Male Head at the representative period of Masculine Life. This comparison applies to the Males and Females in the same family and to the average Male and Female proportions in the Human Race at large, but not to the proportions of the Males and Females of different families, the members of one family being often in excess in the proportions in which the members of another family are deficient.



No. 129
Man and Woman
Same family

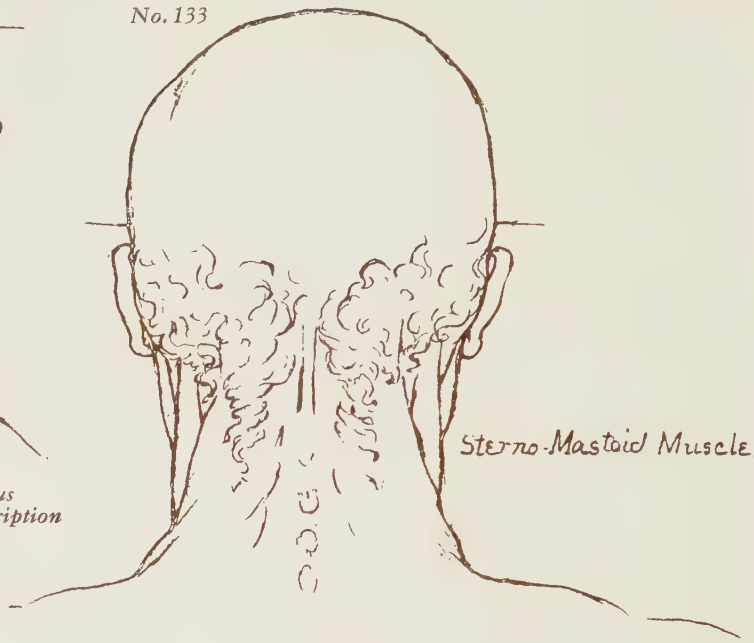
No. 130
Child, Woman and Man
Same family

No. 132



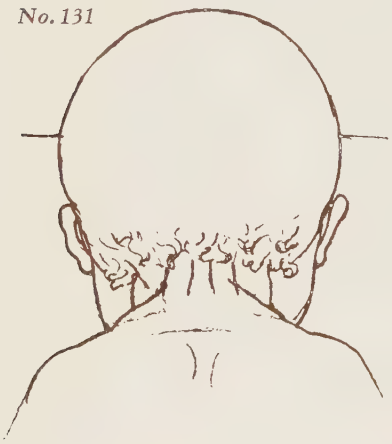
v. v. Right and left Occipital Limb of Trapezius Muscle. Compare throughout. See general description of Male, Female and Infant Heads.

No. 133



Neck large: Head broad
Sexual in all Animals

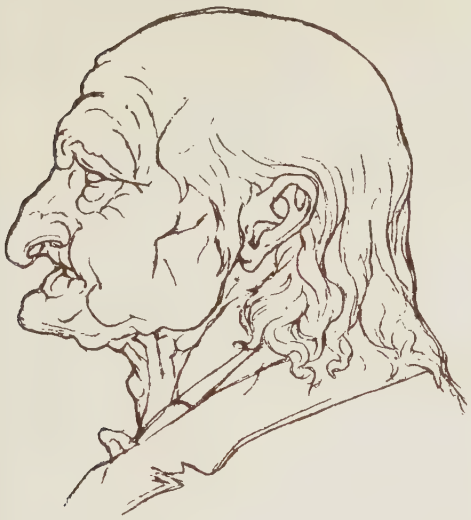
No. 131

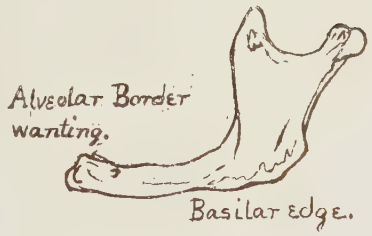


Infant, Female and Male Heads seen from behind. Neck short; shoulders high and narrow.

The type of form peculiar to the Skeleton and the type of form peculiar to the Fleshy parts of the Body are not the same. The Features have a development of their own at a time when the Bones undergo no change. In some Heads the Features govern from the beginning. While the Bones and Muscles after maturity are diminished in strength, the Features are generally becoming larger.

No. 134
Old Age, Masculine and Feminine.
Ears strongly marked.





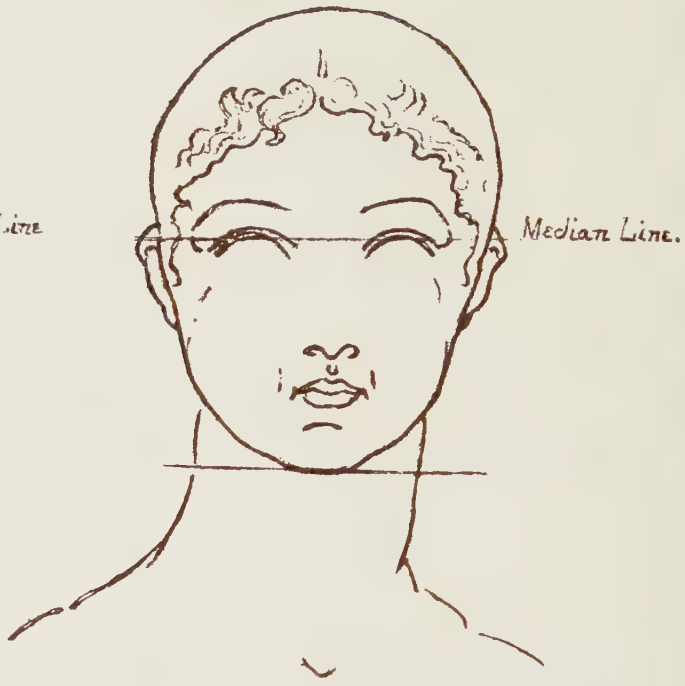
No. 135
Inferior Maxillary — Old Age
Distance from the Nose to the Chin made less by loss of Teeth and absorption of the Alveolar Borders of the Superior and Inferior Maxillary Bones. Notice that in consequence of the want of support afforded by the Teeth and the Alveolar Borders of Jaws, the Mucous portion of each Lip inclines toward the Cavity of the Mouth.

After maturity (Forty years of age for Women and Fifty for Men), the Bones and Muscles of Women often assume a higher development, while the same parts in Men not infrequently become smaller and weaker; though the peculiar structural proportions of Men and Women never lose their distinctive characteristics. Yet because of the changes here referred to, Male and Female Faces are more alike in old age than at the period of highest physical activity. After maturity the Integument throughout the entire Body loses its strength. In the Face the Eyelids droop; the Flesh of the Cheeks becomes pendulous; the Under Lip falls; the Pillars of the Mouth project; the Integument of the Sub-maxillary Region and Neck becomes greatly enlarged, often hanging in folds from the Chin to the Throat; the Sub-orbital Integument assumes a special fullness; and the Skin of the Forehead becomes heavy and wrinkled.

No. 136 *No. 137*
Large and small Alveolar Borders

No. 138 *No. 139*
Masculine and Feminine average outline peculiarities compared

No. 140
Head an Egg-shaped oval
Intelligence governed by the Appetites

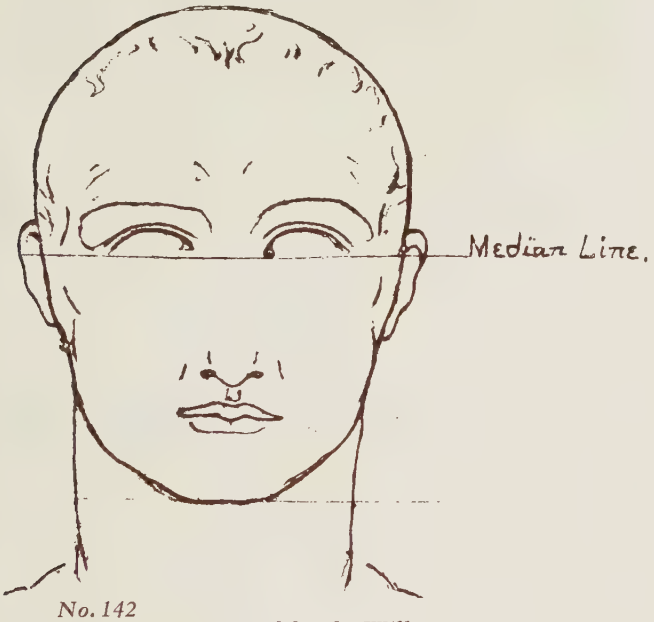


No. 141
Intelligence governed by the Sensibilities

General Remarks

In the progress of growth from Infancy upward, the Female Body never attains the highest point of mechanical completeness. Consequently the Integument with its accompanying condition of the Bones and Muscles never altogether loses its preponderance. In the Female Body, the structure is complete when the principles of structures are fully developed. In the Male Body, through the great activity of the Physical Constitution, the Masculine Form passes over the Ideal, or the development of the principles of structure, toward the Animal to meet the requirements of actual use.

The Female Head, in its general proportions and in the proportions of its several parts, representing the degree of the Female Body — and, too, its relation to the Ideal in the Infantile and Masculine modification of its proportions — becomes the representative of Human proportions and their Ideal. As the general character in each form of Life — Masculine, Feminine, and Infantile — is in natural relation to the proportions and states of the Body under which it exists, and of which the Head is the proper representative, the relation of the several parts of the Head to the Median Line cannot be much changed without changing the general character in the direction of the attributes represented by them — the Head being the representative alike of the Physical and all Intellectual activities, in all things which are common to the three Estates.



No. 142
Intelligence governed by the Will
Though these proportions are variable, they are in the great majority of Heads as here represented

Proportions at Large
Male Body: Mechanical throughout
Female Body: Mechanical, Integumentary, and Sexual
Infant Body: Rudimentary and Integumentary

Each Estate of Life, however, having for its support that modification of the Human Constitution that gives expression to the Ideal of proportions — the changes of form that occur in one can never be of the same significance as those which occur in another, but express rather in each the different ways in which the elements of proportion through the Construction Physical and Intellectual may be combined without changing their relation to their own proper central activities — Masculine, Feminine, or Infantile, as the case may be. Orderly changes in the Animal proportions assert the strength and plasticity of the Animal Constitution, but are in no degree an abandonment of the peculiar activities that underlie and sustain them.

No. 143

Latent. Facial angle 90°. Until the vertical is attained in the Facial outline, First and Second Planes, the horizontal is not attained in the disposition of the Features.

No. 144 Features horizontal
When the Mind is in repose
the Features are at rest.

A kindly expression will beautify the coarsest Features. A good expression in a good Face, and a bad expression in a bad Face, represent the widest extremes of Character. The permanent expression of a Face describes the final balance and proportion of all the intellectual and passional forces underlying it. However bad the expression of a Face may be, it never reaches its greatest depth until it loses its directness and sincerity. Never debase a Head throughout. The expression of a Face is more noticeable than the form of a Face. All passions should be of the Intellect, and therefore the passions of the Intellectual; but in avoiding the things which are purely Animal, we should be careful not to so obliterate all marks of animal strength as to make the Head a meaningless study of proportion only. In the Male Head the Animal Form is often retained when the expression is altogether obliterated. The highest possible extreme of passion should never be described. When both the action of the Face and the action of the Body are expressive of the same purpose, both should be temperate. Neither the ghastly nor the bloody should ever be represented. Never exaggerate or overdo in anything. In passional expressions, the prevailing passion or sensibility described should govern all the Features.

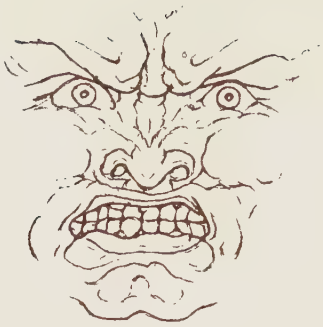
No. 145
To make a strong Man scowl, is to make him a ruffian.

Animal affection

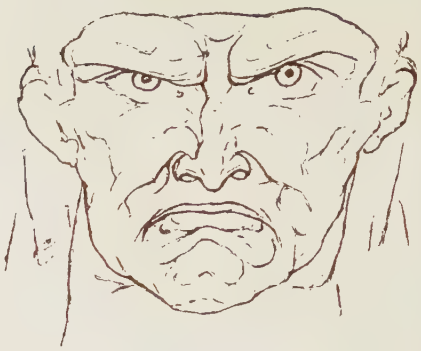
Plan of the disposition of the Features in the Offensive Passions

Pride
Contempt
Hatred
Malice
Revenge
Anger
Rage
Fury of Rage

In the offensive and defensive passions, the Eyebrows are lowered and brought together in a downward direction toward the Nose in such a way as to cover the central and inner portions of the Eyes. The upper Eyelids are drawn back; the Skin of the Forehead and of the frontal portion of the Nose is wrinkled; the Nostrils are dilated and elevated at their inner corners, opening toward the sides of the Face; the Under Lip rises in the center pressing the Upper Lip toward the Nose; the corners of the Mouth are drawn down; the Chin is thrust forward, and the Integument of the Nose above the Nostrils rises in an upward fold — all the Features being drawn together toward the center of the Face at a point near the junction of the Nasal Bones and the upper lateral Cartilages. In these passions the Maxillary portion of the Face — especially that part properly belonging to the Mouth, Lips, and Chin — is made to appear large and more or less Brute-like. In the suppositional relation of the use, form, and action of the Features to the elements of Character, the general intention is expressed in the expression of the Eyes, and as this is the form peculiar to all Animals, so far as the features are capable of any change whatever, it may be conceived to be the neutral form for intent to injure — and means aggression. The Mouth may be supposed to denote the animal forces and their determination and strength. What part shall be assigned to the expression of the Nasal elements — the Isthmus, the Wings, the openings, the Nasal portion of the Isthmus, etc. — it is not easy to discover, since in some of the passions no change whatever is made in the position of any of its detail. The Sensibilities sometimes, however, move them when the Face is otherwise latent and general and constitutional irritability is occasionally associated with a sharply defined concave Nasal outline. If, however, the Sensibilities can be supposed to find expression in this Section of the face, even in part, it will give to the three great divisions of the Face a completeness in correspondence with the three great elements of Character. Otherwise the Nasal Section, except in the structural relation to a particular sense, is a meaningless quantity. As a sustaining part of the passions here described, the expressions of the Nasal Section denotes irritability.



No. 146



No. 147

No. 150

In the Male Head, passions are intensified by a display of the physical energies. An Enemy is weak, cowardly, false, treacherous, undutiful, base, immoral.

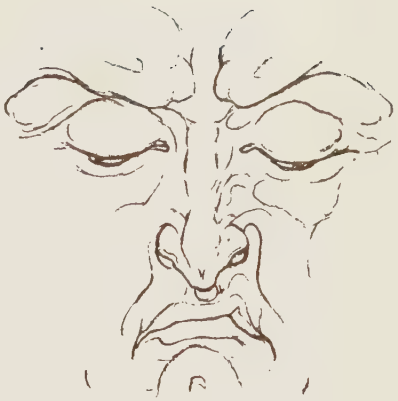
No. 151

No. 151A

No. 155

No. 152

No. 148



No. 149

No. 153

In Animals in which the Eyelids are thin or immovable, dislike is expressed by closing the Eyes. When it becomes furious, the Eyes are opened staring wide.

No. 154

In the Female Head, passions are intensified by a display of the Sensibilities. An Enemy is deformed, vulgar, filthy, deceitful, wrong, unfaithful, gluttonous, vile, immoral.

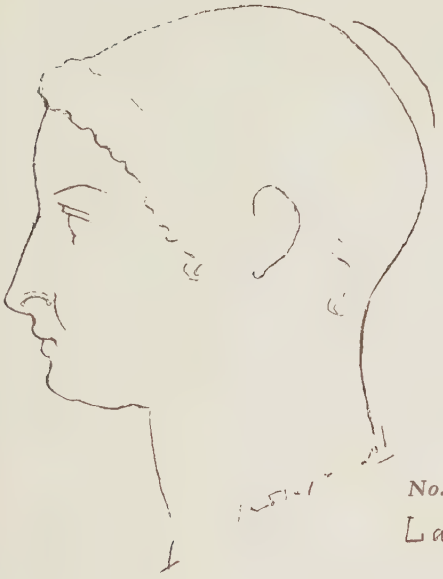
No. 156
Suspicion and Hate

No. 157
The expression of passion should befit the general Character.

Compare

No. 158

No. 159



No. 160
Latent

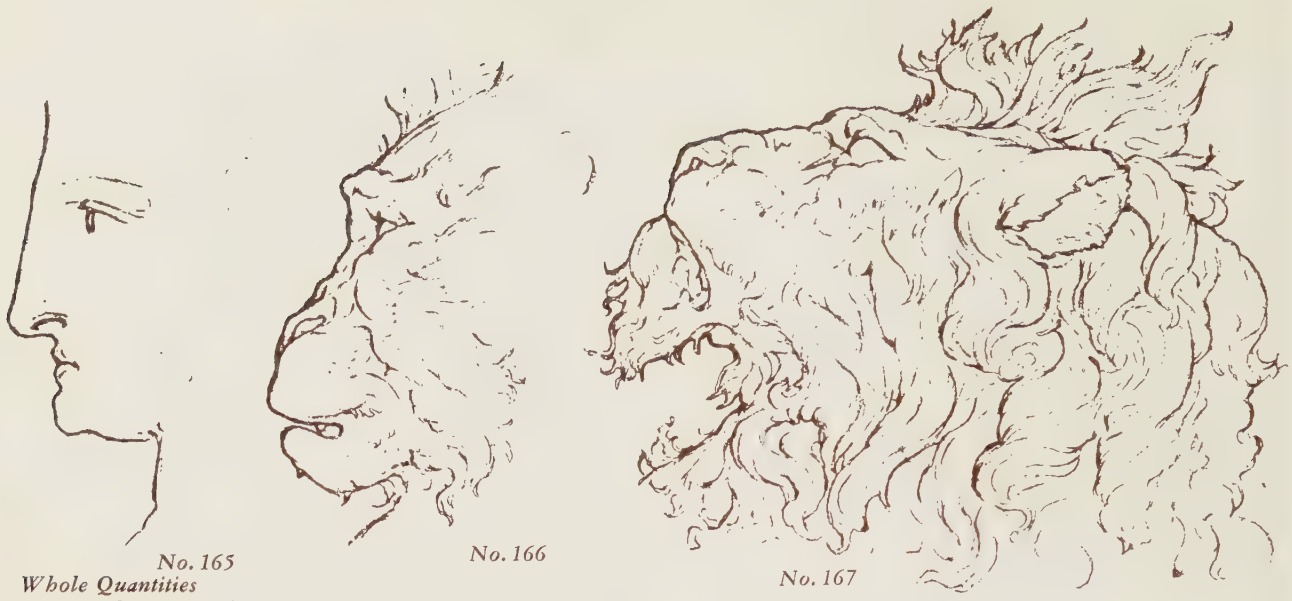
No. 163

No. 162

No. 161

No. 164

When the Features are Latent, the expression may in some degree receive direction from the action of the Body.



No. 165 No. 166 No. 167

Whole Quantities
Structural powers of resistance and aggression compared.
Surroundings attach themselves to persons, and modes of life to types of Heads.

No. 170

No. 171
Nose drooping; Nostrils elevated; Chin lowered and pointed; Eyes partly closed.

No. 168

Joy
Laughter
Content
Pleasure
Friendship

Elevating, Pleasurable, and Friendly Emotions

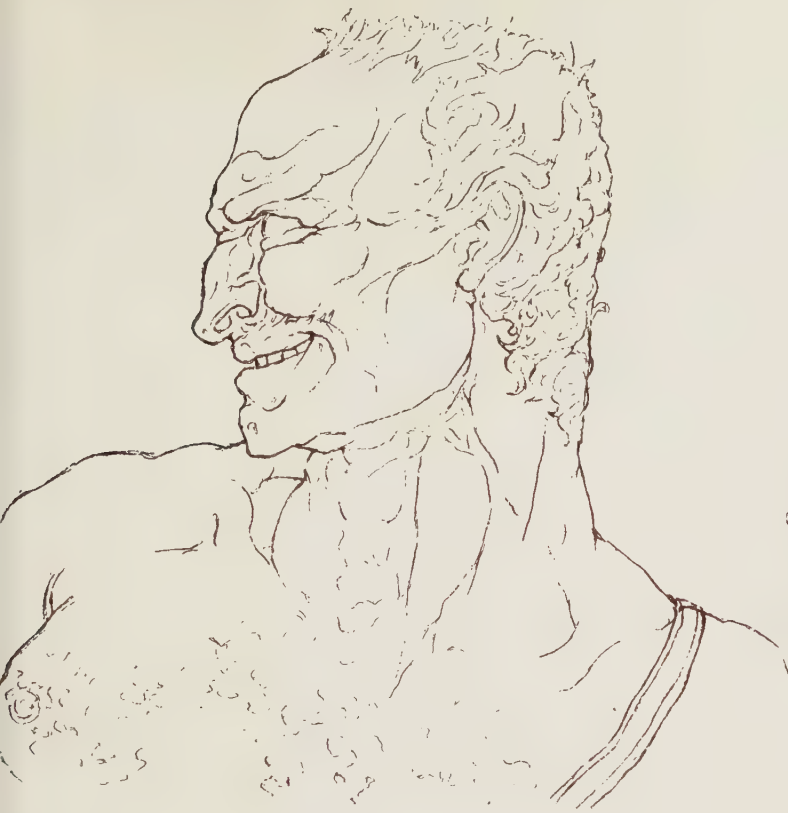
The Eyebrows are elevated throughout, especially at their outer angles; the corners of the Mouth are drawn upward and outward toward the Ears in such a way as to press the flesh of the Cheeks toward the Malar Bones and against the under Eyelid in a circular fold; the Nostrils are expanded, and the outer corners of their Wings lifted; the outer corners of the Eyes elevated, and the Integument at the outer and lower portions of the Orbital Arch folded into wrinkles more or less numerous as the expression is more or less intense. The Features throughout are drawn away from the center of the Face toward the sides of the Head, at a point above the Ears. The general action is the reverse of that peculiar to the destructive energies, and means acceptance as the other means non-acceptance. The one, Attack or Attacked; the other, Attract or Attracted. The prevailing expression of Countenance denotes the prevailing temper of the Mind.

No. 169

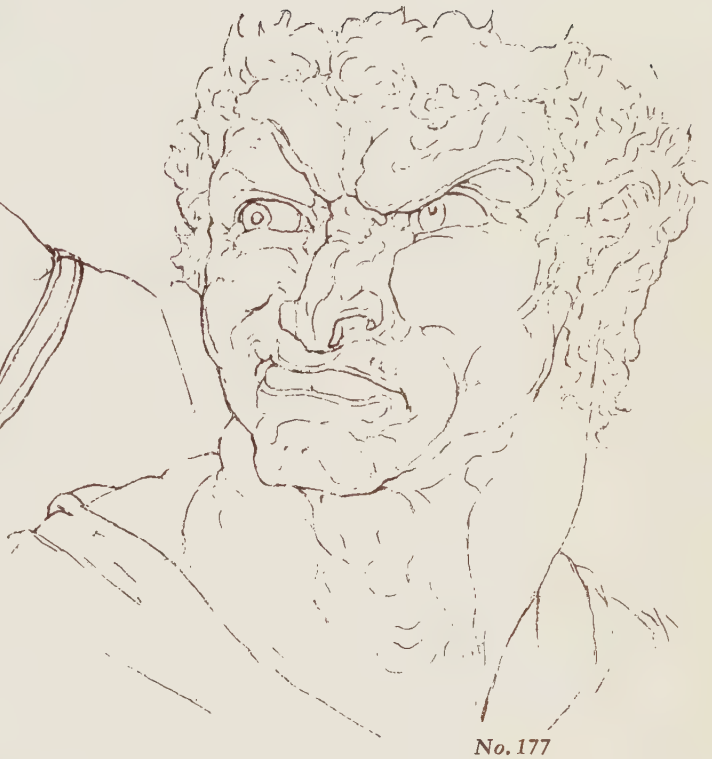
No. 172

No. 174

No. 173



No. 175
Compound Affections
Opposites combined



No. 177
Opposites combined

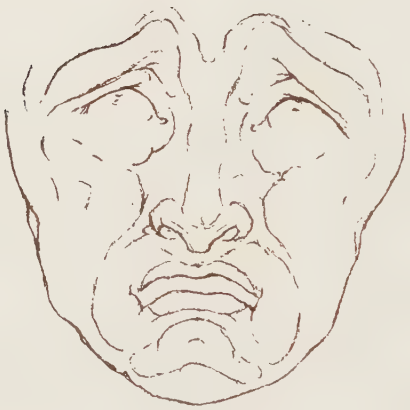
No. 176

No. 176A
Deformed

No. 179

Pain — Grief — Remorse — Sadness — Melancholy

No. 183

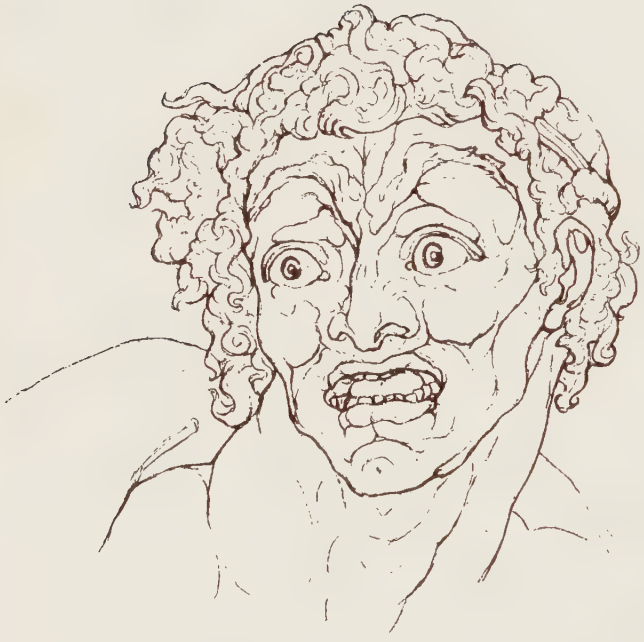


No. 178

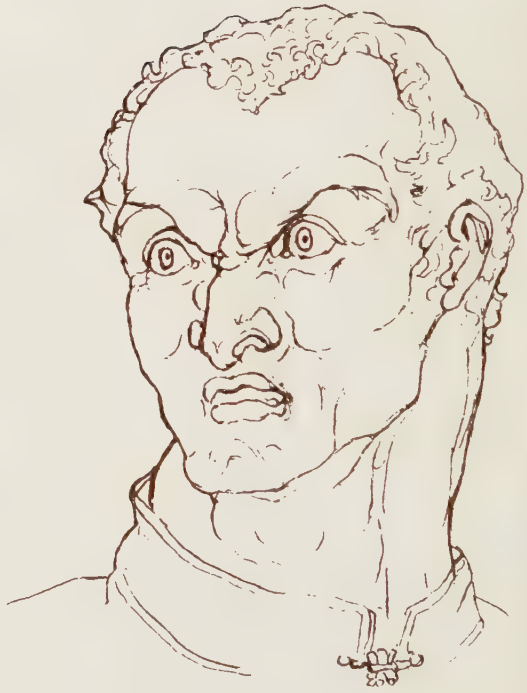
No. 184
Opposites combined

Eyebrows elevated at the inner and depressed at the outer corners. Integument of the Arch, by action of the outer portion of the Eyebrows, pressed down upon the upper Lid, which in turn is pressed down upon the Ball of the Eye. Nostrils dilated and lowered at the inner angle. Mouth drawn upward in the region of the central Lobe, and outward and downward at the corners. Integument of the Mouth drawn upward and backward. Chin elevated in the middle and depressed at its angles. The Features throughout elevated in the center and depressed at the outer borders.

Surprise and pleasure
Curiosity. Attention.



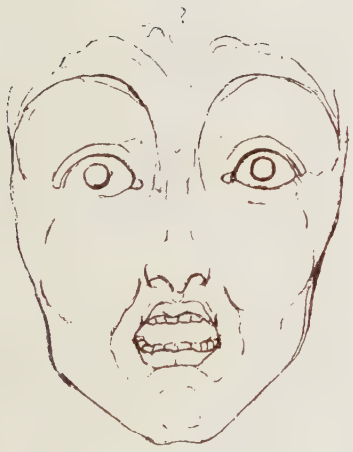
Fear. Details formulated.
Pain, Sorrow, Dislike, Hatred. Watchfulness
Distention of all the Features



Surprise and Dislike

*Figure numbers for the studies on these facing plates do not appear.

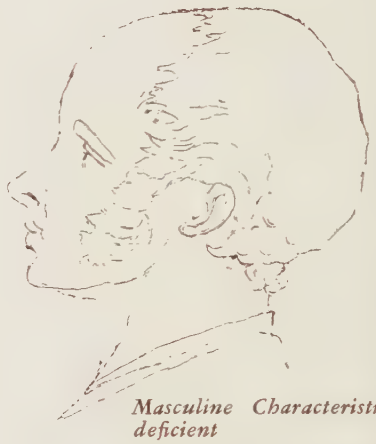
Surprise, Fear, Caution, Disgust
Surprise modified by the sensibilities



Surprise
Distention without Passion

Despair and Hopelessness

Masculine Characteristics in excess



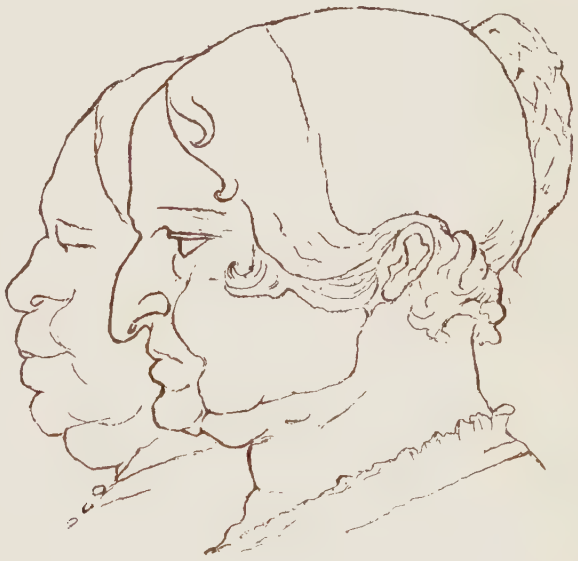
Masculine Characteristics deficient

Compare with all the preceding Heads

Orderly Heads within the mean
Let the Student locate the several elements in each of these Heads.

**Figure numbers for the studies on these facing plates do not appear.*

Feminine Characteristics in excess



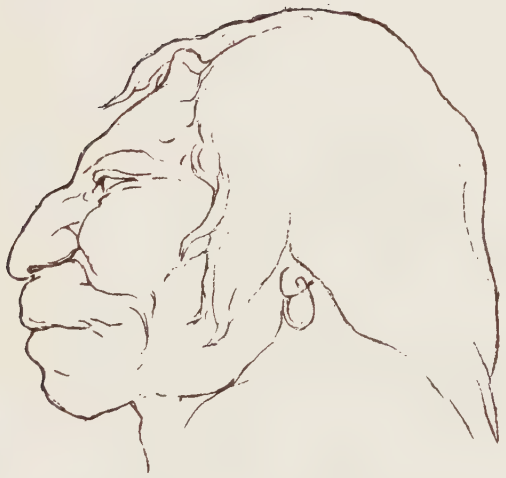
Feminine Characteristics deficient
Compare with all the preceding Heads of Women.

What are the distinguishing Characteristics of the Male and Female Head?

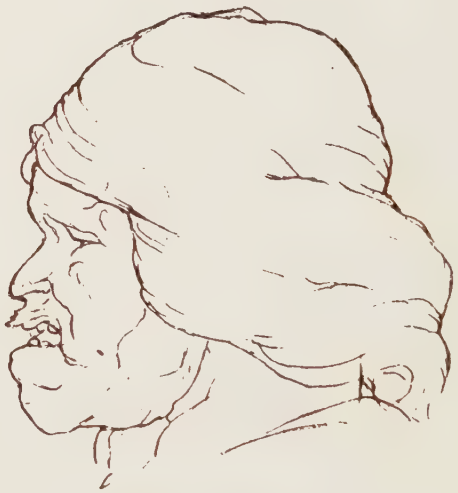
If all the proportions remain the same — that is, the measurement from part to part — the Heads will appear to be the same, even though the Features are different. The proportions must change as the Features and intellectual characteristics change, to avoid this form of mannerism. This does not mean that the same general type of Head may not be represented in every form of expression and character; but that circumstance does not favor us at any time or in any event with Men of the same individual characteristics in any thing. Neither does this refer to the tribal peculiarities of different races, but to the common differences in form existing among the individuals of every people.

No. 185A
Massachusetts Indian

No. 185
Florida Indian



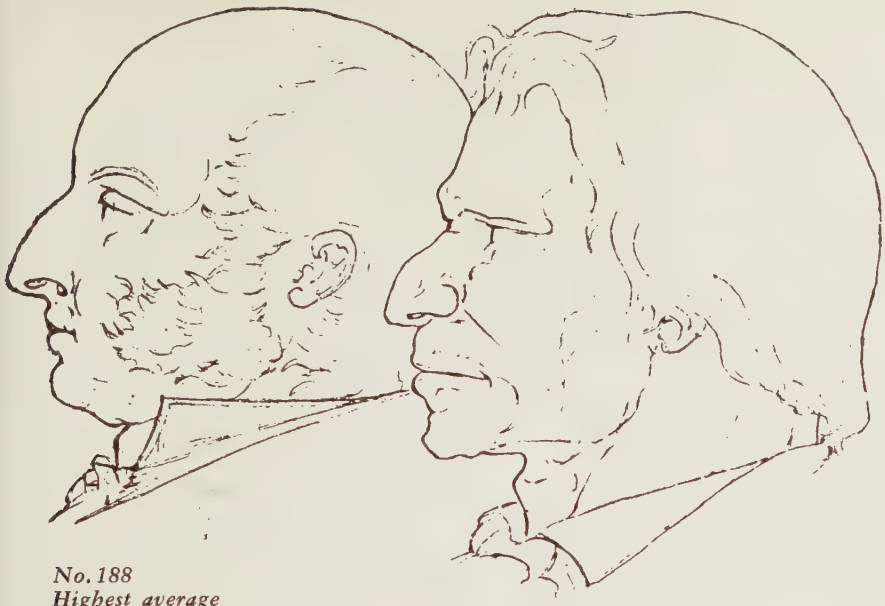
No. 187
Indian of Peru



No. 186
Digger Indian,
California

American Indian

Retreating Chin. Nose hooked and more or less flat. Large Malar Bones. Deep Jaws. Deep Mouth. Retreating Forehead.



No. 188
Highest average outline — English

No. 189
Change of form from Anglo-Saxon to Anglo-American, in which the proportions change to the Indian form.

No. 188A
Highest average outline — American

No. 190
Irish — Debased

No. 191
English — Debased

Return to the Animal Form

Heads of different Nations and Types differ less in their highest Types than in their ordinary Heads or in their debased Heads. As every race has a form of Head peculiar to itself, so every race has a form of debasement peculiar to itself. The Ideal is the representative of the general character, and is impersonal. Individual character is represented by individual forms, and is personal. The Actual embraces every possible modification of the Ideal within the limits prescribed by the Constitution. The Individual Constitution, being the representative of the general ancestry, is governed and sustained by the Ideal or impersonal representing it. Every part of the Body is subject to variation. Every part of the Body has its highest and lowest point of variation above and below the average of proportion.

The descent toward the Animal form in the Human Head is toward the Animal in Human Nature, and not toward the Animal as it exists in Animal nature. The details of structure in the Human Head are always Human — as the anatomy is Human. All actual decline is toward one or another department of its own Animal being, disease or death, and not toward the lower Animals.

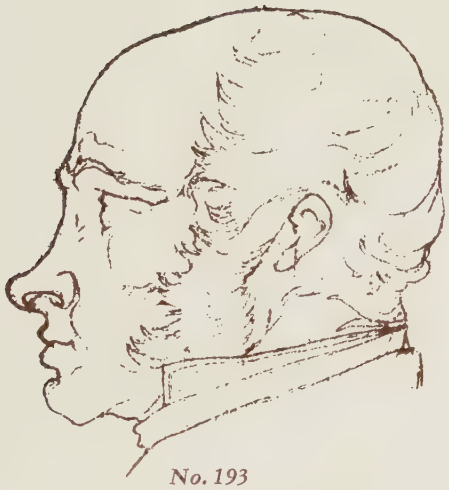
No. 192A
Head of higher form:
Feeble Nutrition;
Grave and Intellectual.

No. 192B
Lust and Gluttony;
Mirthful and Unintellectual;
Animal Passions constant.

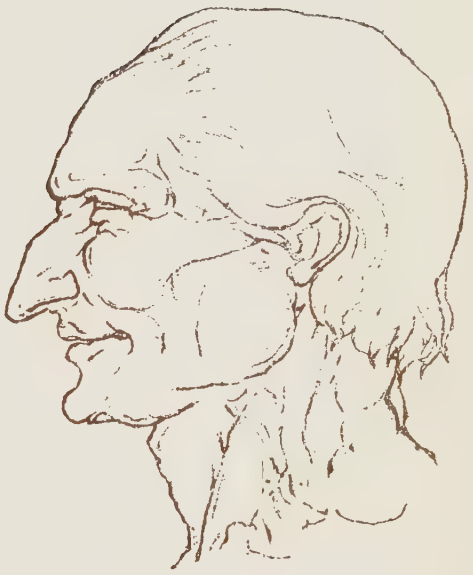
Features Masculine to excess — Retreating Forehead — Retreating Chin — Cerebral Section small — Facial Section large — Integument in the region of the lower Jaw in excess — Neck large, muscular, and integumentary — Features coarse and imperfectly formed. When the animal functions supporting life are performed with unusual activity (the Head being of the Animal Type), the Animal Appetites to which they minister are supposed to be correspondingly active. A coarse, massive Jaw is supposed, in any Head, to stand as the representative of brutal and immoral instinct. The lower races are in some instances more strongly marked in a Masculine and Animal way than some of the higher races. If it could be assumed that the Cerebral Section represented the intellectual attributes; the Maxillary Section, the nutrient and combative or carnivorous appetities; the Neck and Jaws combined, the sexual appetites; the Nasal Section, Forehead, and Chin, the sensibilities; the Eye, the purpose; the texture of the Hair and condition of the Skin, the sensitiveness of the Constitution to the activities of the Mind; — the Ideal Head representing the Ideal Character, and every departure from it a departure toward one or other of the intellectual or animal attributes — Physiognomy might be considered a Science approximating in some degree to that kind of exactness found in the Science of Physiology.
Individual Characteristics are represented in all races by the same peculiarities of form, there being but one type of Structure and Character for all Mankind.

Passions and Appetites orderly

No. 195



No. 193
Sensibilities active;
Animal Passions and Appetities
nervous and uncertain.



No. 194
Cunning, Rapacious, Treacherous,
Hypocritical, Fanatical.

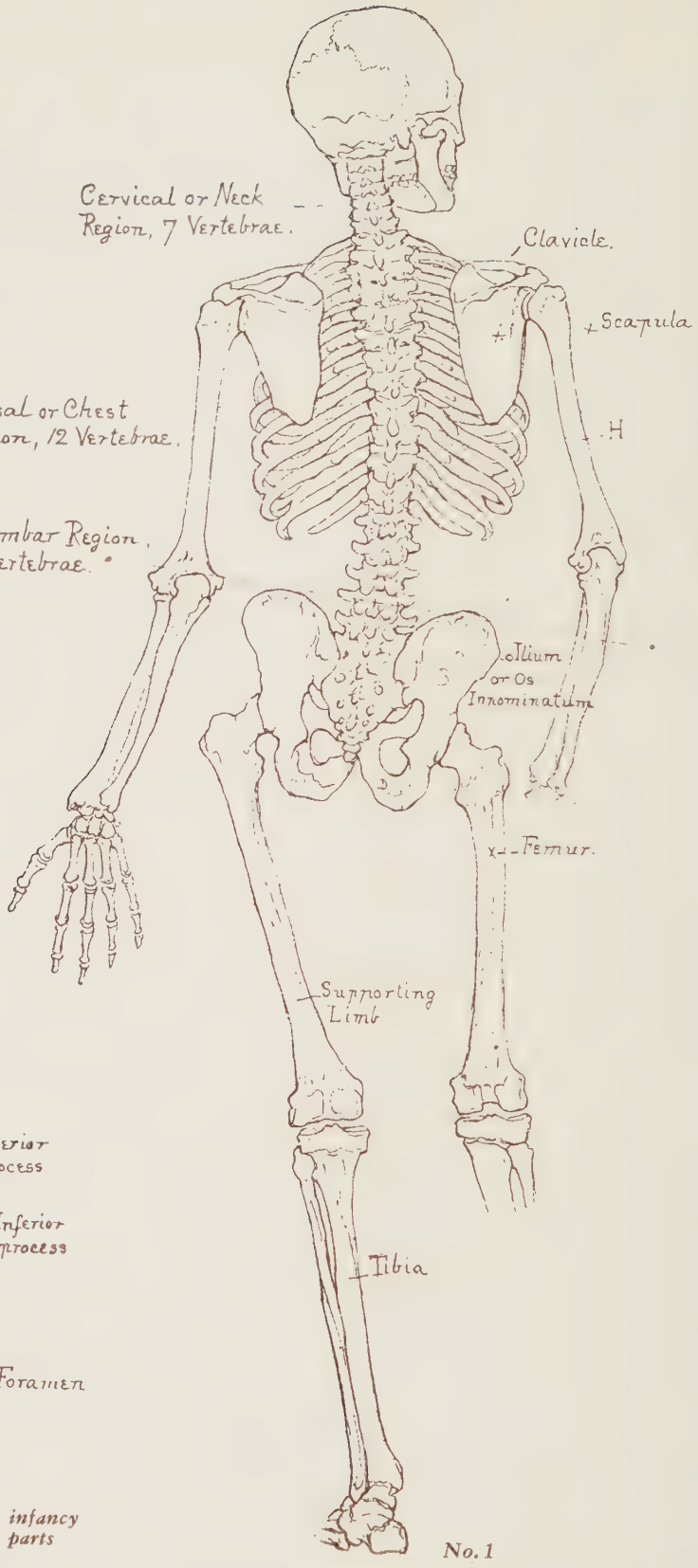
Expression Brutal and Monstrous

Find first and second planes in Nos. 192, 193, 194.

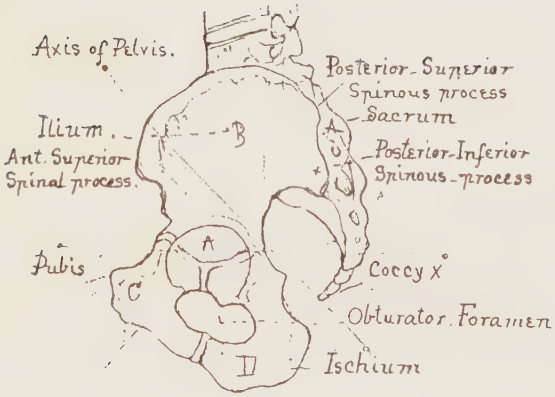
THE BODY

Number of Bones in the Body

The entire Skeleton in an Adult consists of 204 distinct Bones: Vertebrae Column, Sacrum, and Coccyx, 26; Cranium, 8; Ossicula Auditus, 6; Face, 14; Os Hyoides, Sternum, and Ribs, 26; Upper Extremities, 64; Lower Extremities, 60.

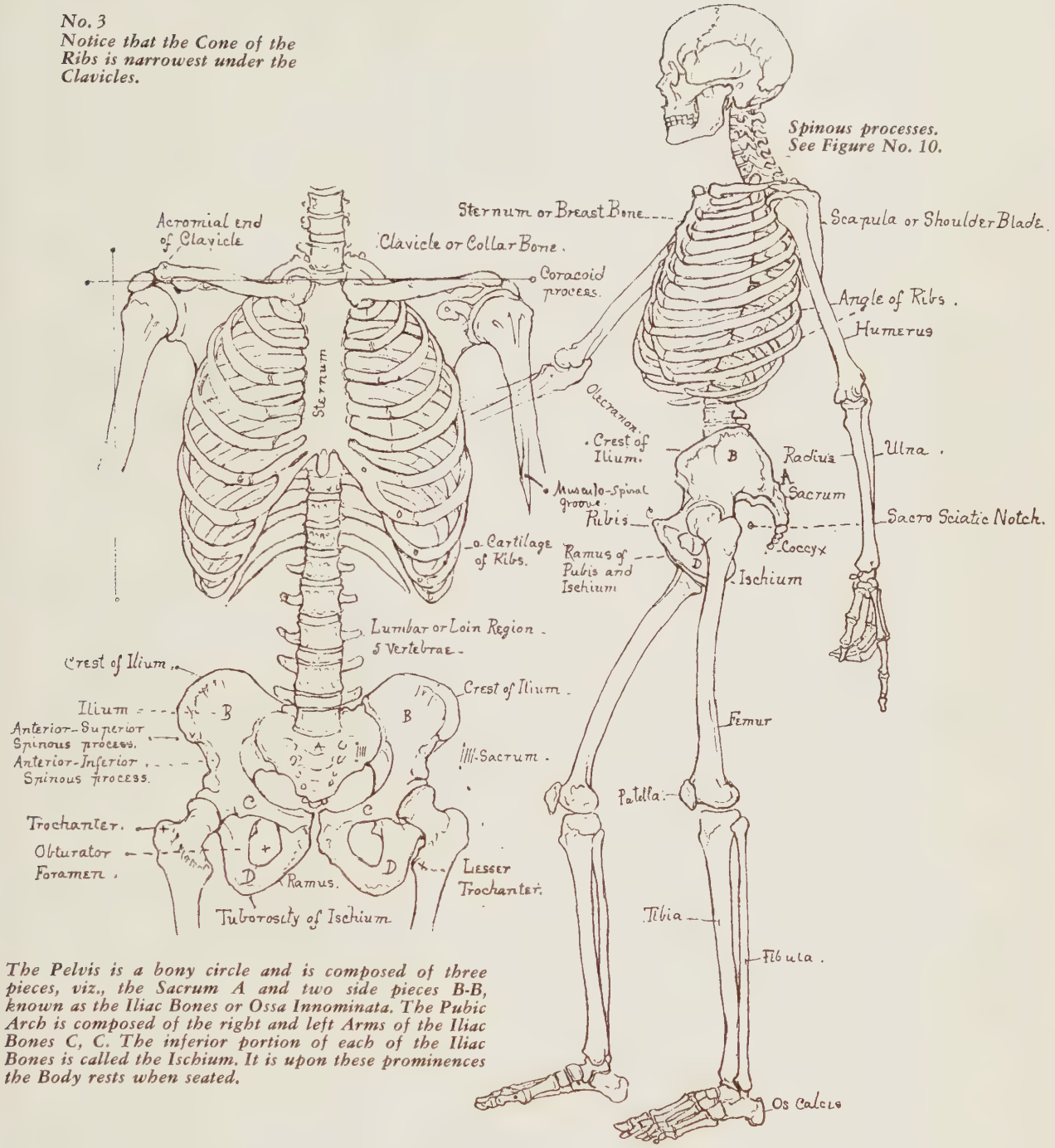


No. 1
Pelvic Region — composed of right and left Pelvic Bones and the Sacrum.



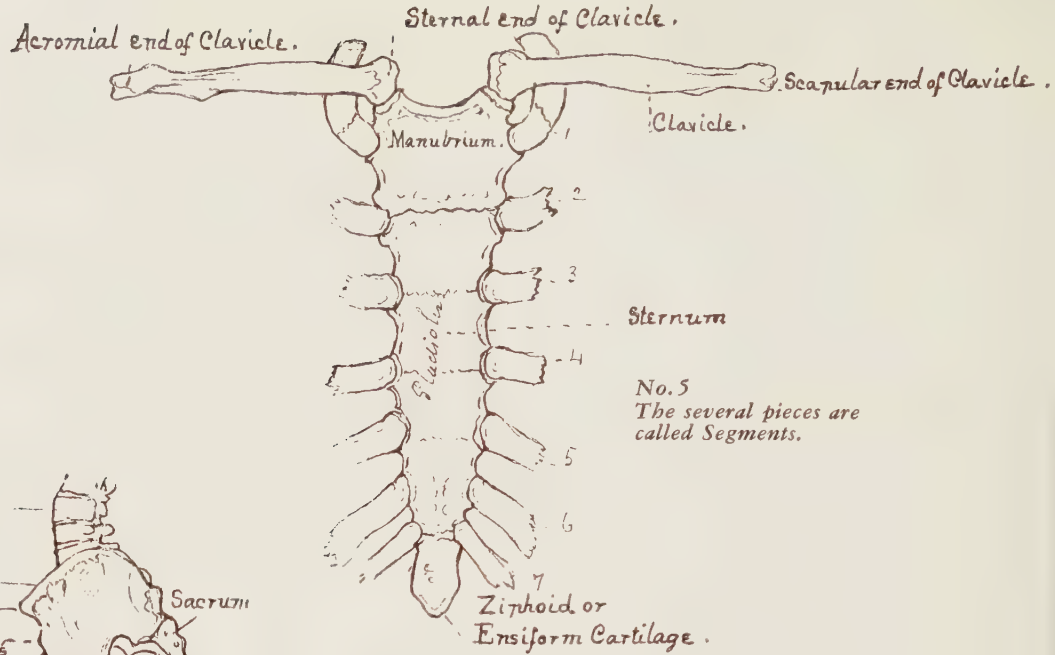
No. 4
The Ilium, Pubes and Ischium are in early infancy separate pieces as here represented — these parts uniting in the Cotyloid Cavity A.

No. 3
Notice that the Cone of the Ribs is narrowest under the Clavicles.

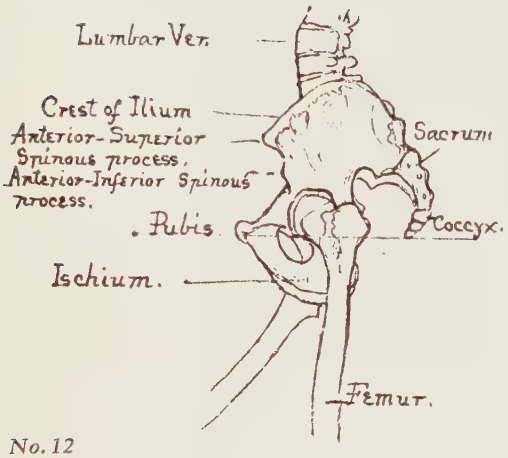


The Pelvis is a bony circle and is composed of three pieces, viz., the Sacrum A and two side pieces B-B, known as the Iliac Bones or Ossa Innominata. The Pubic Arch is composed of the right and left Arms of the Iliac Bones C, C. The inferior portion of each of the Iliac Bones is called the Ischium. It is upon these prominences the Body rests when seated.

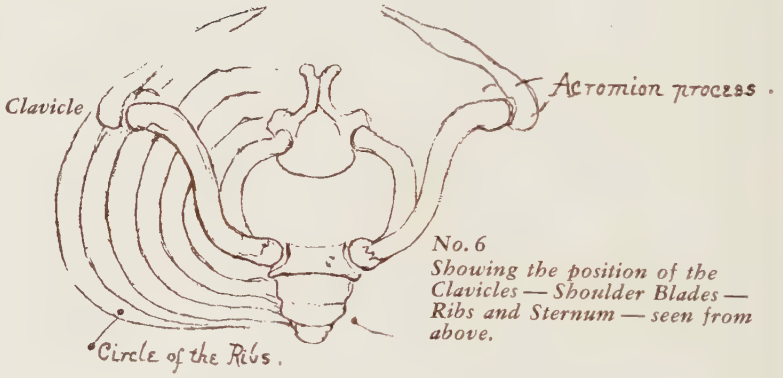
No. 2
The head of the Thigh Bone rests in a cavity called the Acetabulum or Cotyloid Cavity. The right and left Arms of the Pubis unit at a point called the Symphysis Pubis.



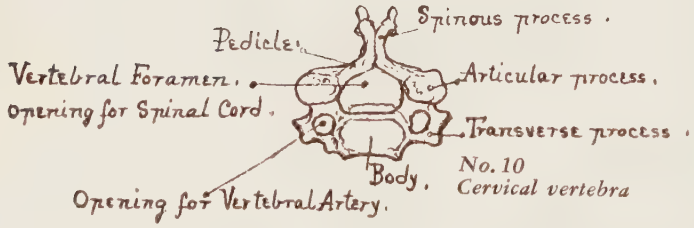
No. 5
The several pieces are called Segments.



No. 12
Profile view of Pelvic Bones
See preceding Skeleton parts, Nos. 1—4.



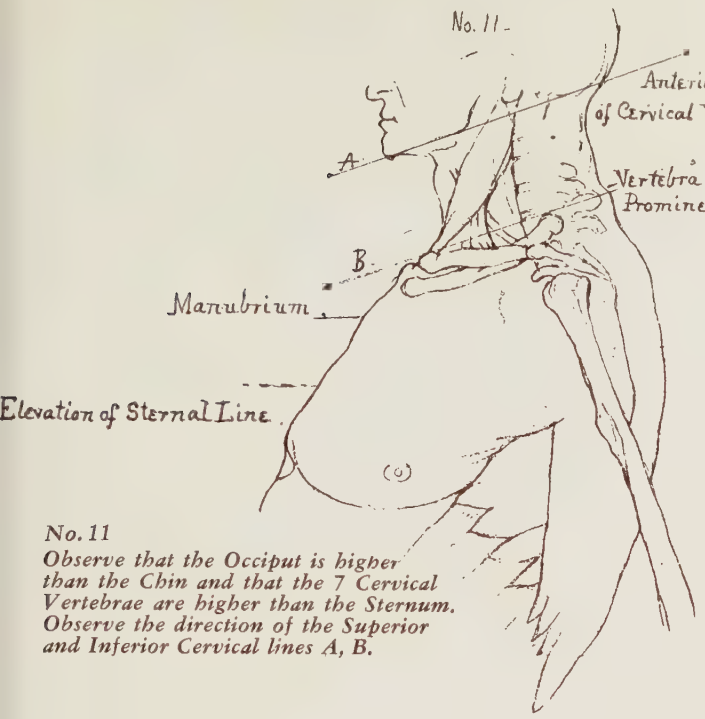
No. 6
Showing the position of the Clavicles — Shoulder Blades — Ribs and Sternum — seen from above.



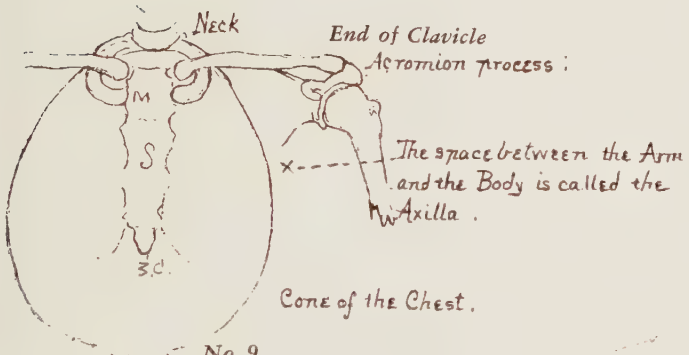
No. 10
Cervical vertebra

Position of Acromion process
Acromial end of Spine of Scapula

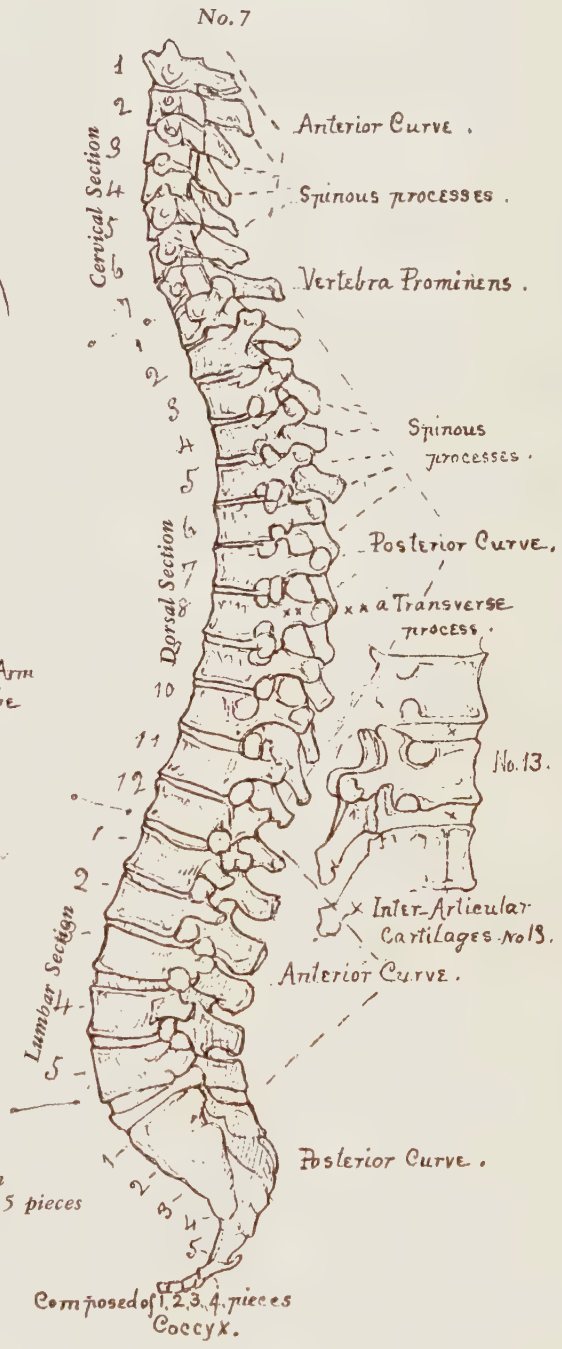
No. 8
Clavicles and top of Sternum seen from above.



No. 11
Observe that the Occiput is higher than the Chin and that the 7 Cervical Vertebrae are higher than the Sternum. Observe the direction of the Superior and Inferior Cervical lines A, B.

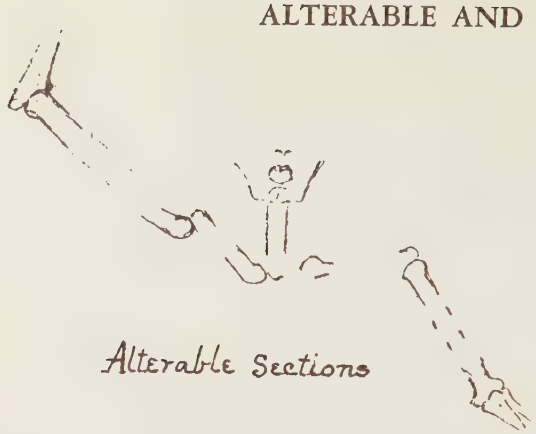


No. 9
Observe the extent to which the Arms project beyond the Ribs.



Sacral Section
Composed of 5 pieces
Anchylosed.

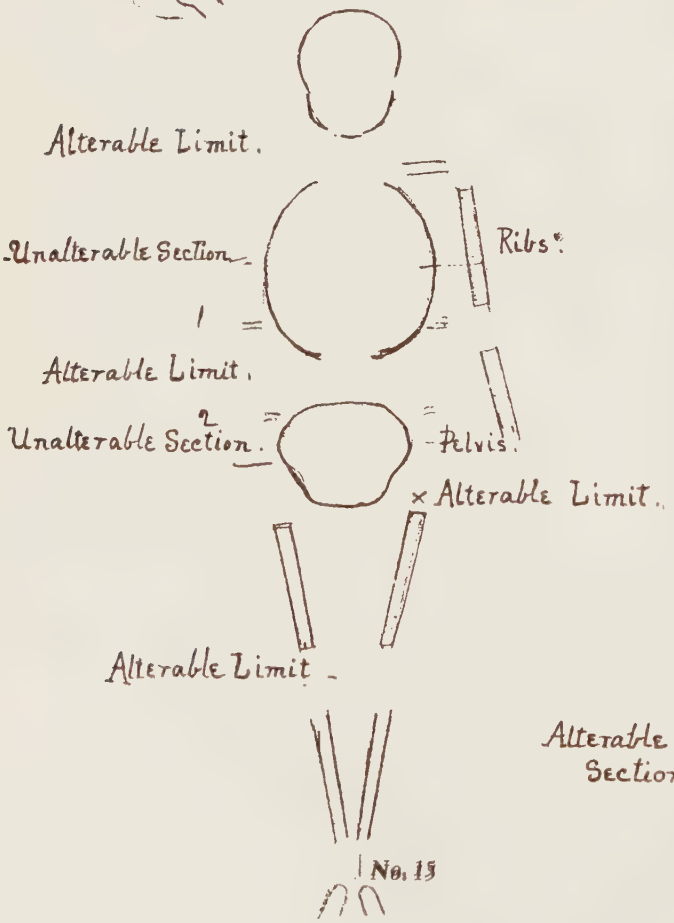
The Cervical Vertebrae are distinguished mainly by the opening in the transverse process for the passage of the Vertebral Artery; the Dorsal Vertebrae, by a shallow cavity on each side of the Body to give insertion to the heads of the several Ribs; the Lumbar Vertebrae, by the absence of both the Vertebral Foramen and the Lateral Facet.



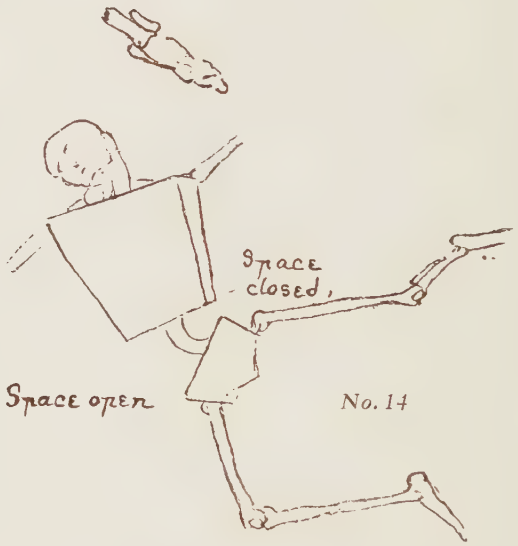
No. 20

No. 21

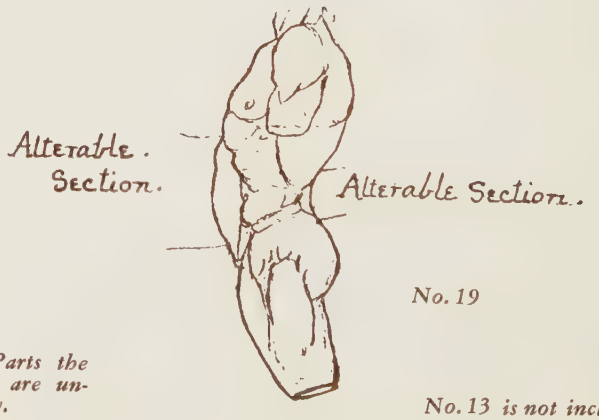
Parts the form and measurement of which are changed by the motions of the Body.



Solid or Unalterable Sections — Parts the form and measurement of which are unaffected by the motions of the Body.

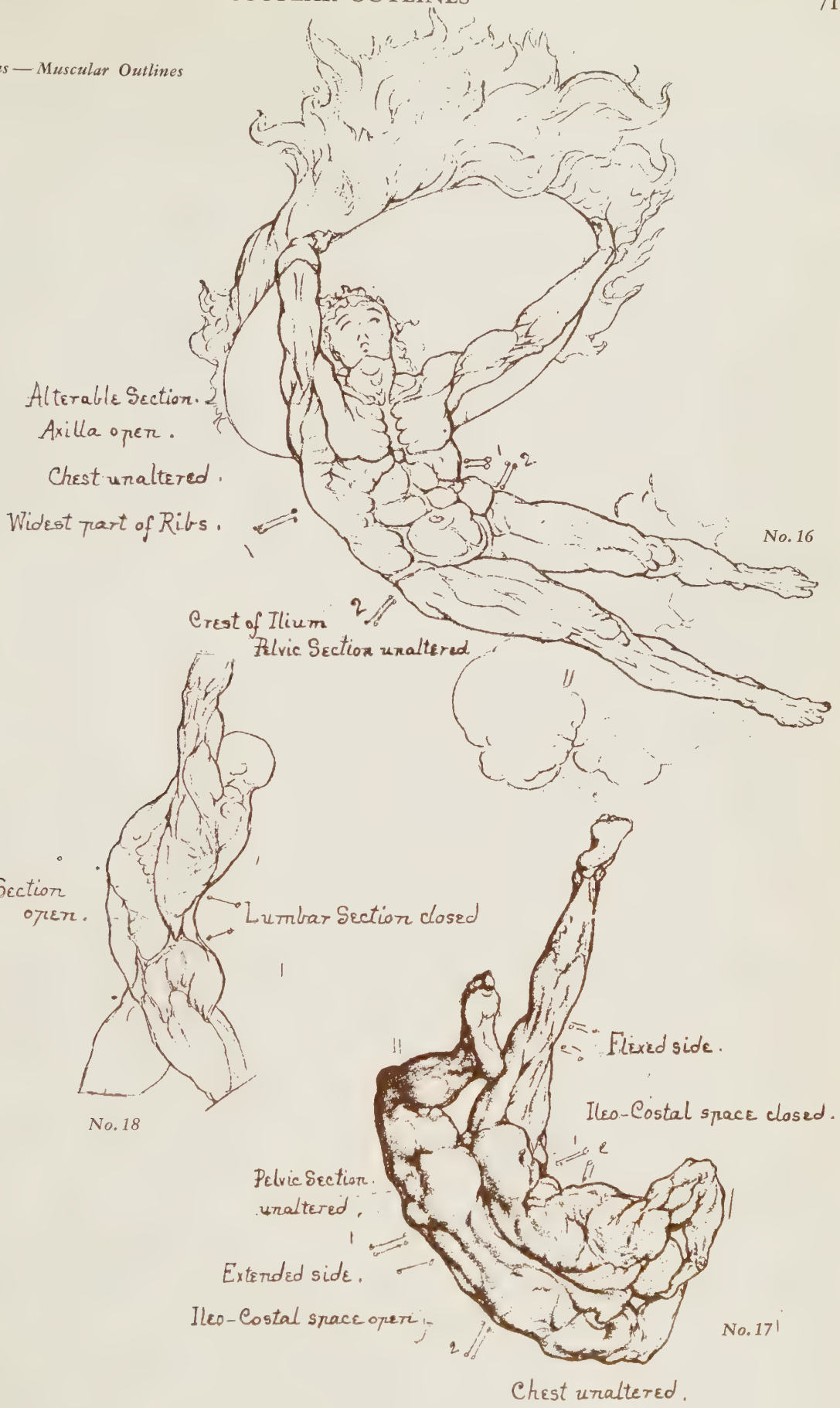


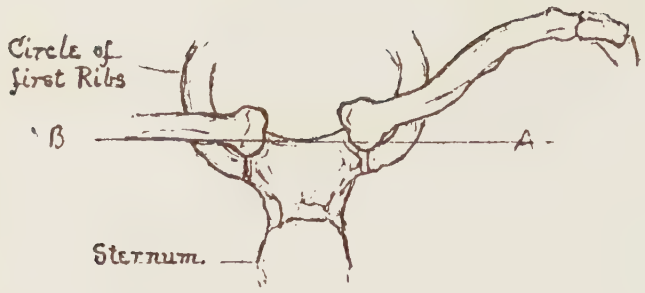
No. 14



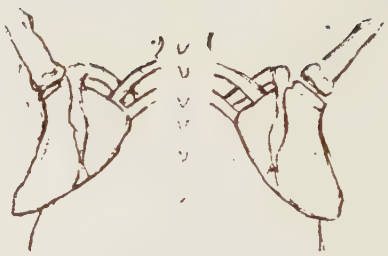
No. 19

No. 13 is not included.

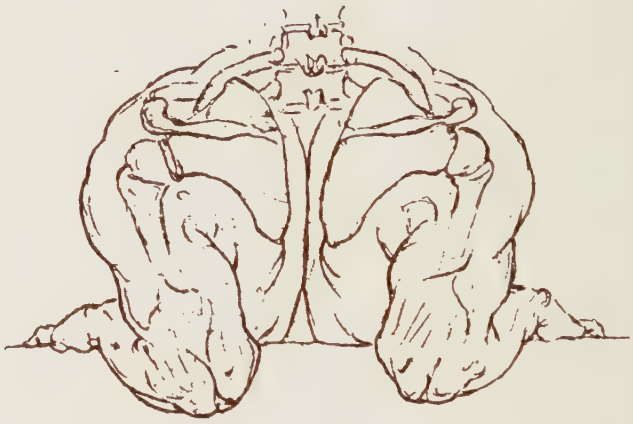

Alterable Section.
Axilla open.
Chest unaltered.
Widest part of Ribs.
No. 16
Crest of Ilium
Pelvic Section unaltered
Abdominal Section open.
Lumbar Section closed
No. 18
Flexed side.
Ileo-Costal space closed.
Pelvic Section unaltered.
Extended side.
Ileo-Costal space open.
No. 17
Chest unaltered.



No. 31
Plan showing the position of the Clavicle when the arms are elevated above the horizontal, A. No. 31. The Clavicles may be forced into this position by throwing the weight of the Body upon the Hands, B. The position of the Clavicle when the Arm is at rest or its motions performed below the top of the Sternum, BA. Notice: In raising the Arm above the top of the Sternum, the Body is inclined to the opposite side. The principle underlying this motion is illustrated in every movement of the Body. An intellectual sense of equilibrium united to the instinctive sense in persons of taste gives grace and precision to the motions of the Body. The sense of proportion has much to do with the sense of equilibrium as we see it illustrated in those about us whose movements are controlled by the peculiarities of the Bodies. To pass from the Shoulders by graceful descent to fine and well-formed extremities indicates in the Masculine form the highest precision of motion and the finest sense of equilibrium. Narrow Shoulders and Pelvis and large Hands and Feet are inversions of the principles of mechanical uses or equilibrium in the Human Body. The motion of persons so made can never be other than awkward and inexact when put to extremist trial with one of opposite form. To discover this by contrast is the artist's endowment, whether the executive power accompanies it or not. What is most common is the sense of form. What is least common is the quickness of sensibility (which in these things is common sense) necessary to discover what it is that the sense of form should perpetuate.



No. 32
Scapular Section
Position of the Shoulder Blades when the Arms are elevated above the top of the Sternum. The higher the arms are elevated, the more the outer ends of the Clavicles will be elevated and the farther the inferior angle of the Scapular Bones will project beyond the line of the Ribs.



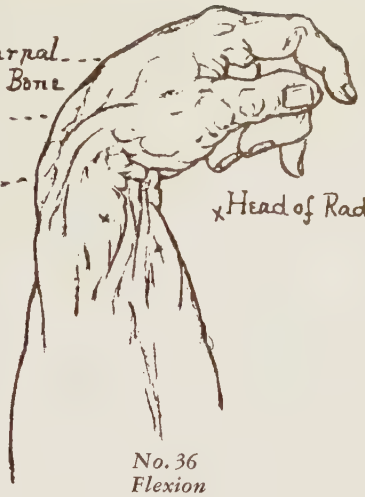
No. 33
Plan showing the place of the Scapular Bones when the arms are thrown back toward the Spinal Column.

No. 35

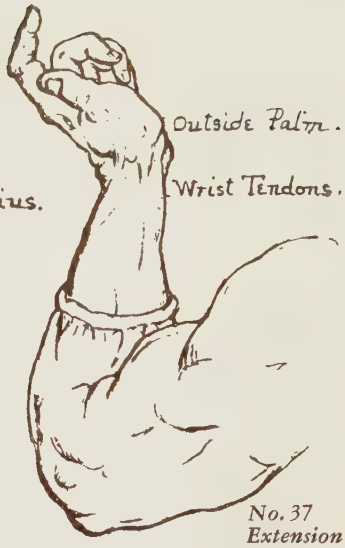
*Figure Nos. 22-30 do not appear.

No. 40
Radius
Hand turned
outward

No. 39
Hand turned
inward



No. 36
Flexion

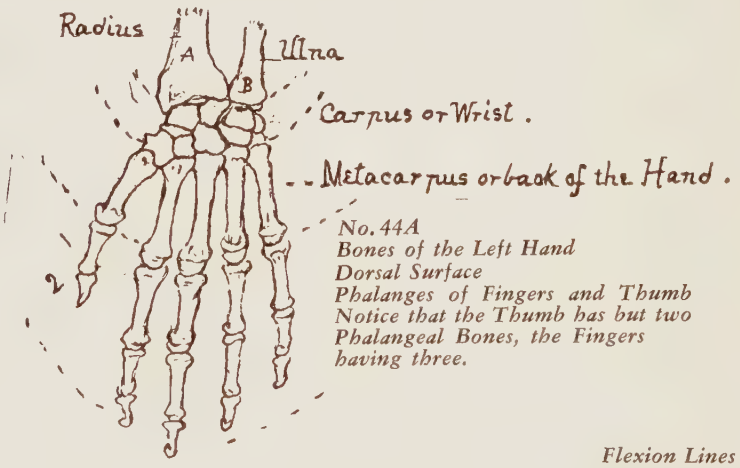


No. 37
Extension

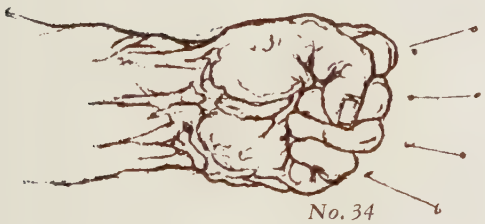
No. 38
Back view
Fixed Joint

No. 44
Lateral extension

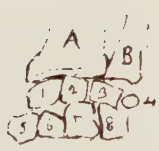
The Bones of the Hand articulate with the Radius and move freely upon it in all directions. The Metacarpal Bone of the Thumb may be moved in all directions. The Metacarpal Bones of the Hand proper are firmly bound to the Bones of the Wrist. The spaces between them may, however, be opened or closed by lateral extension following the movements of the Fingers in this direction to a limited extent. In extending the Fingers laterally, the Fingers radiate from the Carpus outward and not altogether from the Knuckle end of the Metacarpus. By this motion the back of the Hand is slightly widened; the second Bone of the Thumb extends nearly to the end of the first Bone of the first Finger.



No. 44A
Bones of the Left Hand
Dorsal Surface
Phalanges of Fingers and Thumb
Notice that the Thumb has but two
Phalangeal Bones, the Fingers
having three.



No. 34

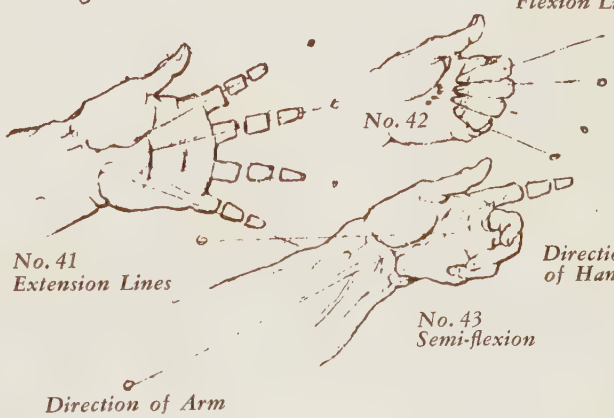


No. 44B
Carpus — Composed of 8 pieces

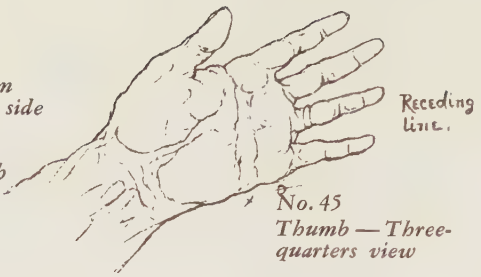
1. Scaphoid Bone.
2. Semi-Lunar Bone.
3. Cuneiform Bone.
4. Pisiform Bone.
5. Trapezius.
6. Trapezoid.
7. Os Magnum.
8. Unciform.

The Bones of the Wrist though slightly movable by their peculiarity of form act together as a solid mass.

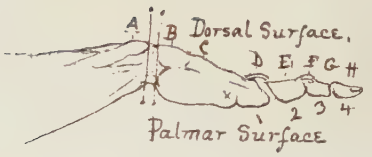
Flexion Lines



The bones are seldom seen on the Palmar side of the hand. Notice at what points the several joints of each finger touch the finger beside it.

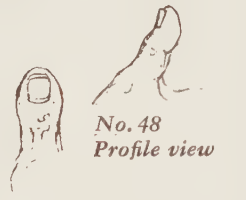


No. 45
Thumb — Three-quarters view



No. 47
A. End of Ulna
B. Carpus
C. Head of Metacarpus
D. Knuckle
E. First Section of Finger
F. Skin of Joint
G.-H. Second and third Section of Fingers

Notice that the first joint of the finger in consequence of the length of the Palmar integument seems but a little longer than the second. Notice that the middle or transitional section extends across the hand and is composed of the head section of the several fingers. Notice that just above this section is another marked x — the line separating it from the other section of the hand becomes the boundary line of the transitional section of the junction of the web of the thumb and joint section of the forefinger. When the thumb is extended the outline is either in profile or three-quarters view. For the surface projection of the several parts of the outside of the palm of the hand, see Plan No. 45. For dorsal section, see Plan No. 49. For the form of the wrist in flexion and extension, see drawings on preceding page. Notice the form of the heel or outside section of the palm, the ball of the thumb and the joint section throughout.

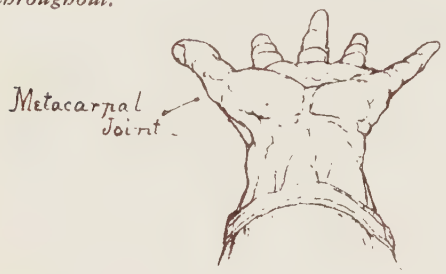


No. 48
Profile view

No. 46
Thumb Head

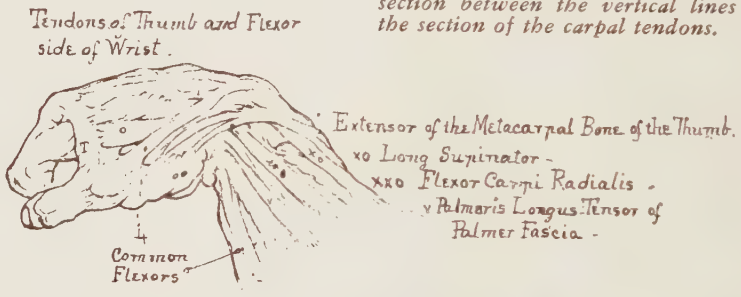
No. 56
Palm of the Hand partly closed

The flesh of the palm as is shown in this Plan extends beyond the knuckle joint nearly half-way to the joint below — the joint being D. The section marked I when the hand is closed belongs to the Palmar Surface of the fingers. When the hand is open to the Palmar Surface of the palm of the hand, flexion occurs at the fissure marked x. The Palmar Surface is longer than the Dorsal Surface when the hand is open — shorter when it is closed — measuring from the end of the middle finger to the knuckle joint. The fingers are longer than the Dorsum of the hand. The section between the vertical lines is the section of the carpal tendons.



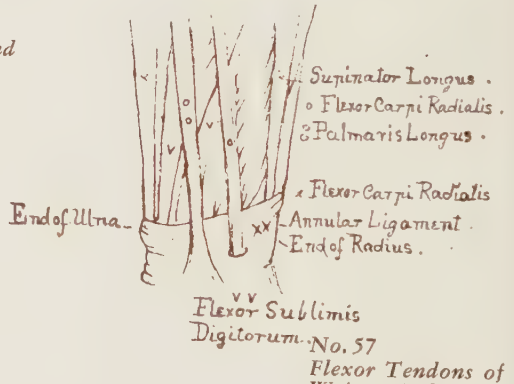
No. 53
Palmar elevation as seen from behind when the hand is extended directly and laterally

Study the wrist and hand carefully.


Tendons of Thumb and Flexor side of Wrist.
Extensor of the Metacarpal Bone of the Thumb.
xo Long Supinator.
xxo Flexor Carpi Radialis.
v Palmaris Longus. Tensor of Palmer Fascia.
4
Common Flexors

No. 55
Tendons of Thumb and Flexor side of Wrist

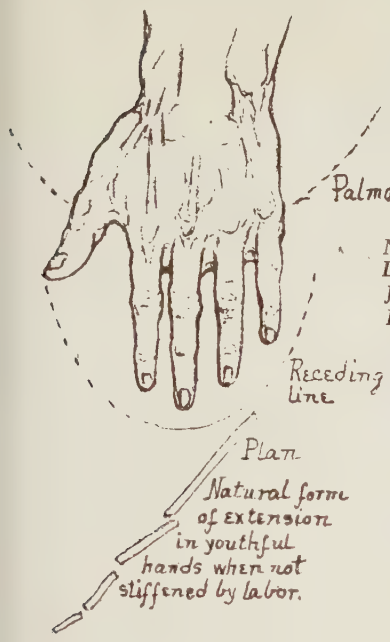
Exterior Muscle of Thumb
The Extensors and Flexors cross the Arm diagonally and therefore the Flexor Muscles are also Pronators — the Extensors also Supinators — the Supinators are also Flexors.



No. 57
Flexor Tendons of Wrist — Palm side

No. 54
Tendons of the back of the Wrist and Hand

oo *Opponens of Thumb.*
o *First Dorsal Inter-osseous Muscle of Thumb.*
: *Ulnar Extensor.*
1 *Tendon of short Radial Extensor Carpi Radialis Brevior.*
2 *Tendon of long Radial Extensor — Extensor Carpi Radialis Longior*
3 *Tendon of Extensor Brevior of the Thumb.*
4 *Dorsal Extensor of the Thumb-Conspicuous on the Dorsum of the Thumb.*


Palmar Integument or Web seen between the Fingers.
Receding line
Plan
Natural form of extension in youthful hands when not stiffened by labor.

No. 49
Direction of Metacarpal Joints and Palmar Integument

No. 50

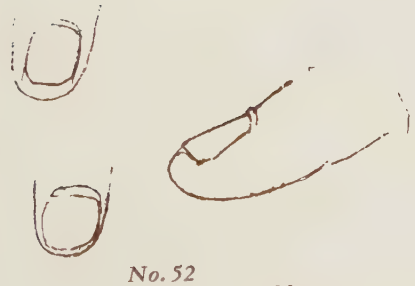
No. 51

Male and Female Hands

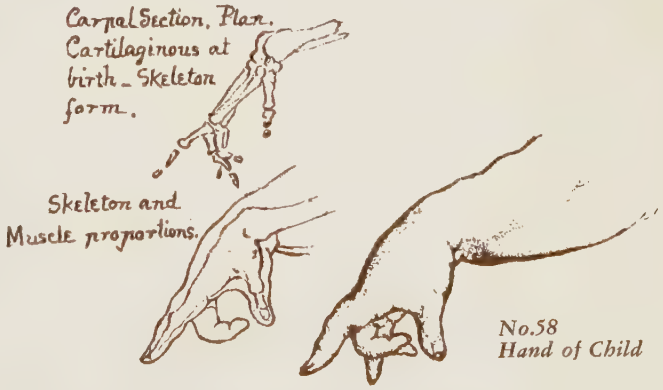
Notice the integumentary web joining the thumb and forefinger.

See Nos. 50, 51, 55, & 56.

Male and Female Hands — Elementary and outline proportions compared. The hands of men are generally broader and thicker than are the hands of women. The outlines of the hands of men take their form from the bones and muscles of the several parts. The outlines of the hands of women take their form, as in the hands of children, from the fatty matter lying between the bones and muscles and the skin. The hands of women are more flexible than the hands of men; narrower in proportion to their length: of finer proportions in the animal scale and capable of greater exactness in their use. A small or weak hand is a great deformity. Every section of the hand should have the fullest length and width consistent with fine proportion. When the fingers are thick, short and large at the ends, the hand is beastlike. When the fingers are too long with loose joints and soft integument, the constitution is generally feeble. The hands as a whole like the foot, should be as large as exact fineness of general proportion will permit.

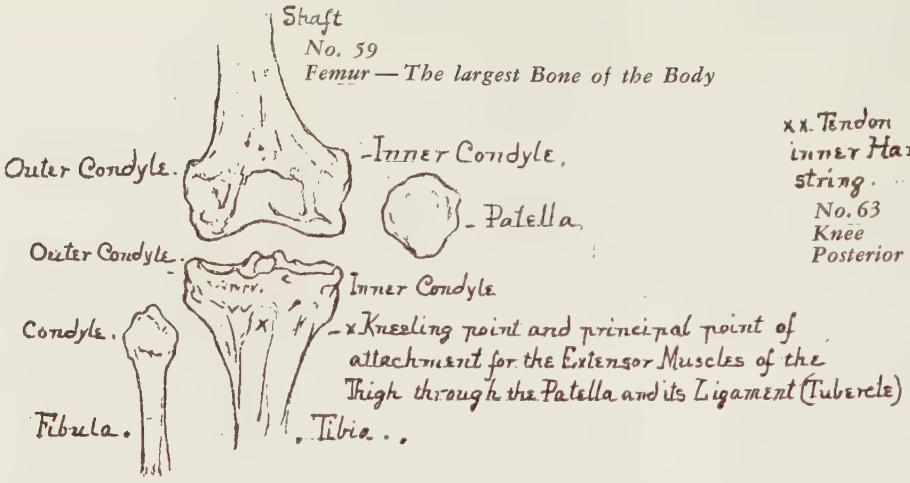


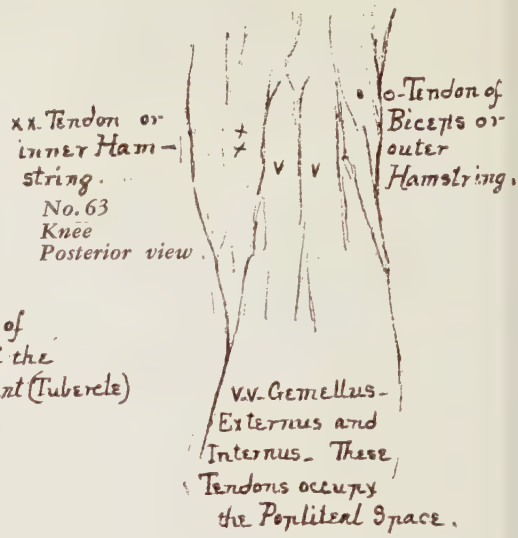
No. 52
The nail should never extend to the outline.

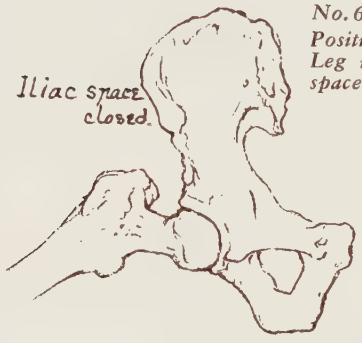


No.58
Hand of Child

Outline altogether integumentary. The joints of extension represented by dimple cavities rather than by bony eminences or fold of skin. Outline convex — Phalangeal Sections short and generally imperfectly defined. Wrist bones obscured by folds of integument. No tendons seen. Joints susceptible of almost unlimited extension.




xx. Tendon of inner Hamstring.
No. 63
Knee
Posterior view.
o. Tendon of Biceps or outer Hamstring.
v.v. Gemellus-Externus and Internus. These Tendons occupy the Popliteal Space.



No. 61
Position of the Trochanter when the Leg is extended laterally. Ischial space open.

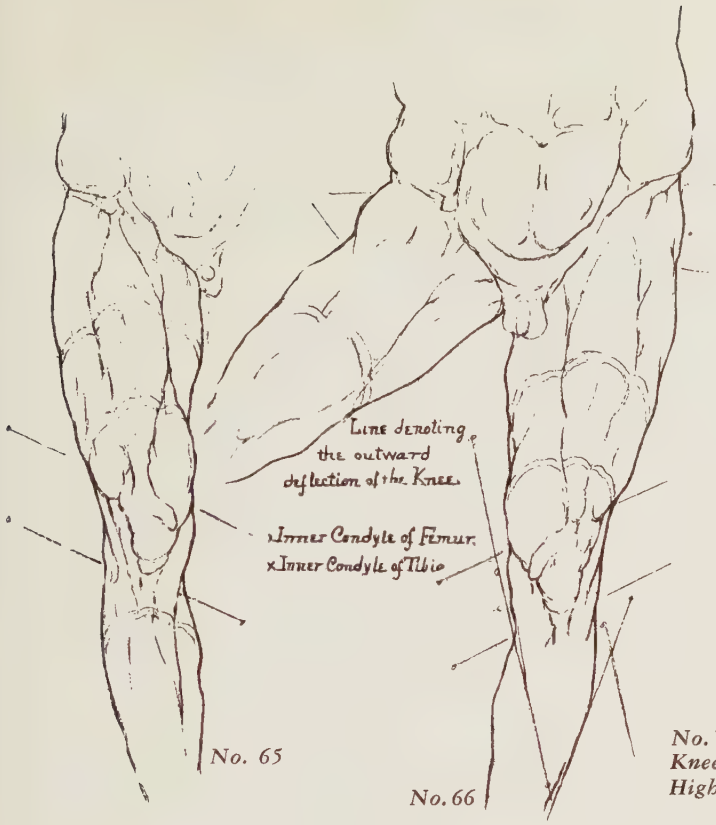
Rim of Cavity.
Ligamentum Teres
Line representing the Muscles extending from the crest of the Ilium to the Trochanter major.
x Anatomical Neck.
v. Head of Femur.
Trochanter Minor

No. 60
Trochanter Major

No. 62
Muscle line.
Compare with No. 61.

The Trochanters in finely formed Men are in front view obscured in part by the Muscles of the Thighs and Hips.

No. 64



No. 65

No. 66

No. 68
Side view. Place of Patella when the leg is flexed.

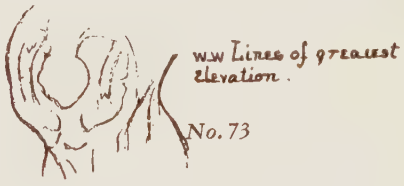
No. 69
Side view. Place of Patella. Latent Patella resting on the Femur.

No. 71
Knee of Woman
Highest average proportion

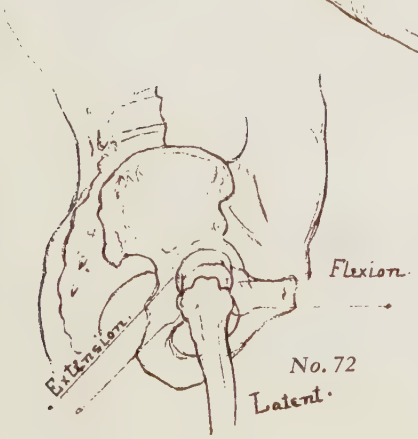
No. 70
Knee of a Child when strongly marked. Average outline. Compare with Plan of Female Knee.

No. 74
Side view. Place of the Trochanter.

No. 67
Position of the Trochanter when the Body rests upon the Hip or is thrown toward the opposite side.

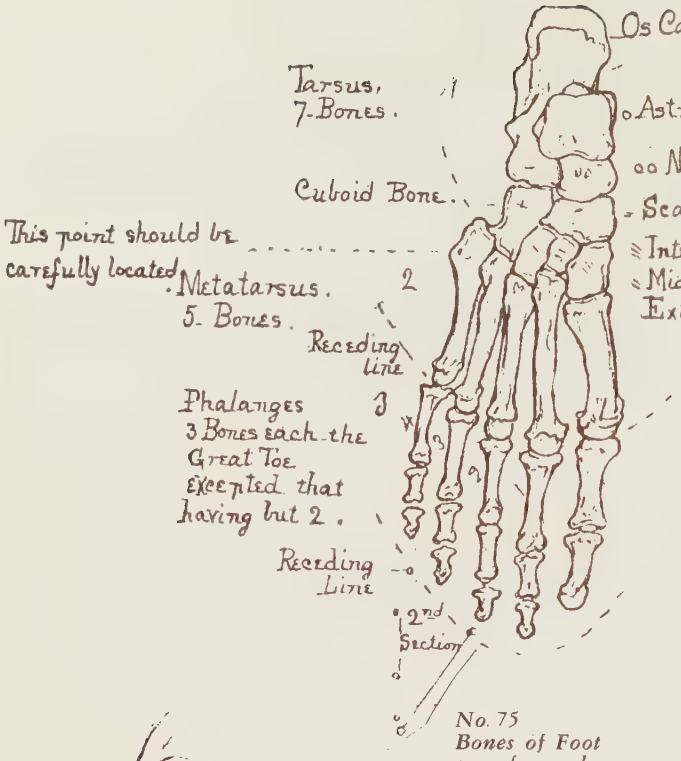


No. 73



No. 72

No Figure can be fine in which the Joints are not fine — Shoulders, Elbows, Wrists, Hips, Knees, Angles, Heels, Insteps, Toe and Hand Joints. The Knee is the finest Joint in the Body, and every detail of its mechanism and proportions should be carefully studied. Formed as it is of the Articular Sections of the upper and lower members, it should be treated independently as an element of general proportion. In Women, the Bones of the Knee are covered by a thick Integument, presenting in consequence the rudimental proportions of early Infancy. A limb should never be flat or angular.

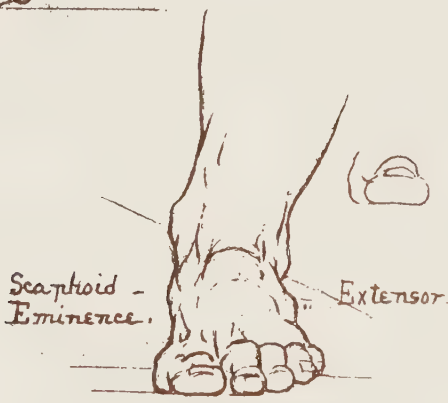


No. 75
Bones of Foot seen from above

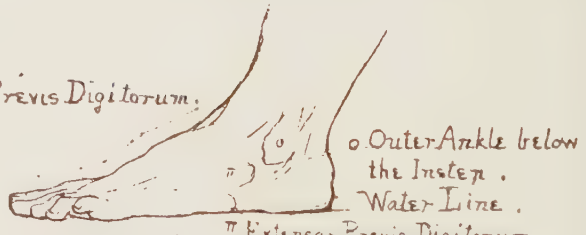
The first of the true toes is the largest of the series. The length of each of the sections should be carefully studied. In walking the weight of the body is thrown upon the ball of the great toe and the metatarsal joint of the first true toe. The weight is finally thrown upon the head bone of the great toe and escapes along the plantar line disappearing on the outside of that line at a point opposite the nail. The great toe and the first of the true toes in the proportion of two of the former and one of the latter in power, constitute the first section of the base of support. The second, third and fourth toes losing power in corresponding ratio constitute the second section. When the weight of the body is thrown upon the outside of the foot, the framework of all the toes gives support to the metatarsal joint of the little toe. The point bearing the weight of the body is determined by the position of the great toe in relation to the central line of support. When the toes are turned in, either habitually or for the moment, the weight of the body is upon the outside or second section. When the toes are "turned out" the weight will be upon the first section and in each case more or less as the toes of each foot are nearer together or farther apart. When the leg is thrust out laterally the weight will be upon the first section. When the body leans toward the outside of the foot, the weight will be upon the second section.

No. 80

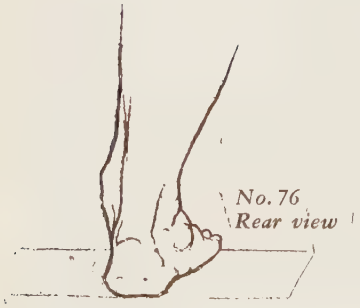
No. 77
Bones of Foot Posterior view



No. 75 *Front view*



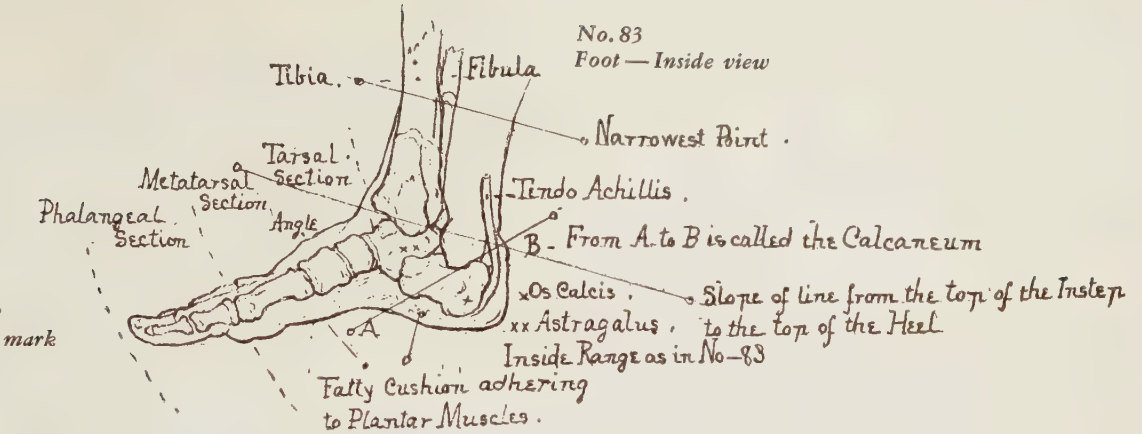
No. 78



No. 76
Rear view

No. 81

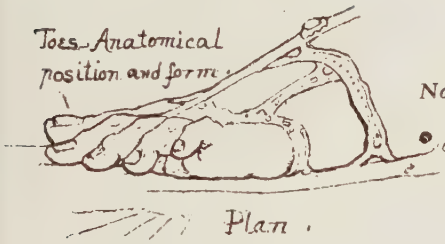
No. 79
Front view
Find the points of interest.



No. 83
Foot — Inside view

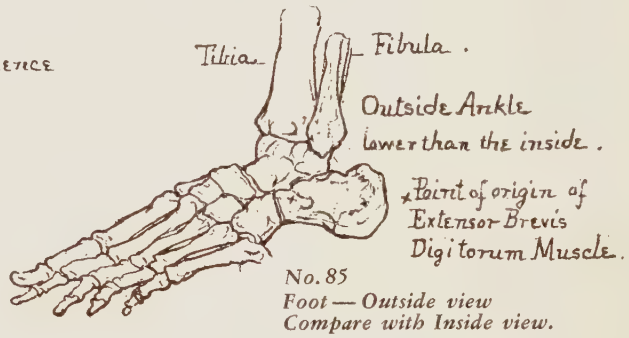
No. 92
Water mark

Inside Water Line — This line extends from the terminal limit of the heel to the end of the toes. When the instep is low, this line touches the ground line.

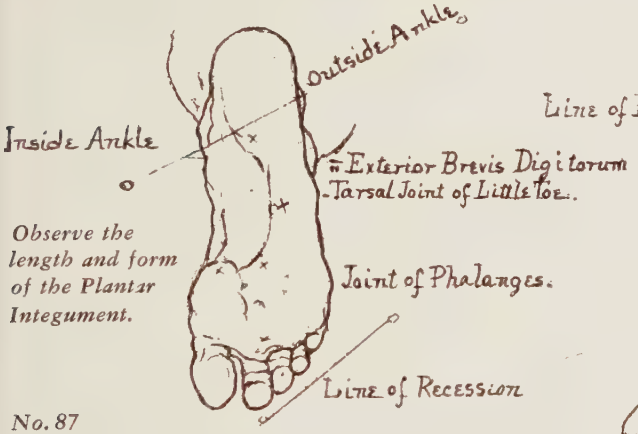


No. 82

No. 84
Ordinary form

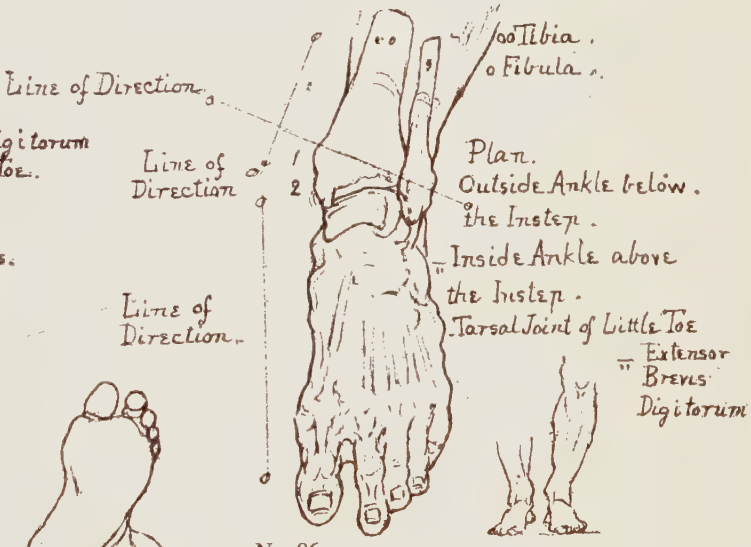


No. 85
Foot — Outside view
Compare with Inside view.



Observe the length and form of the Plantar Integument.

No. 87
Foot — Plantar Surface
The inner ankle is higher up and farther forward than the outer ankle. Notice the form of the water line.



No. 86
Find the several sections.

No. 90
Inside view

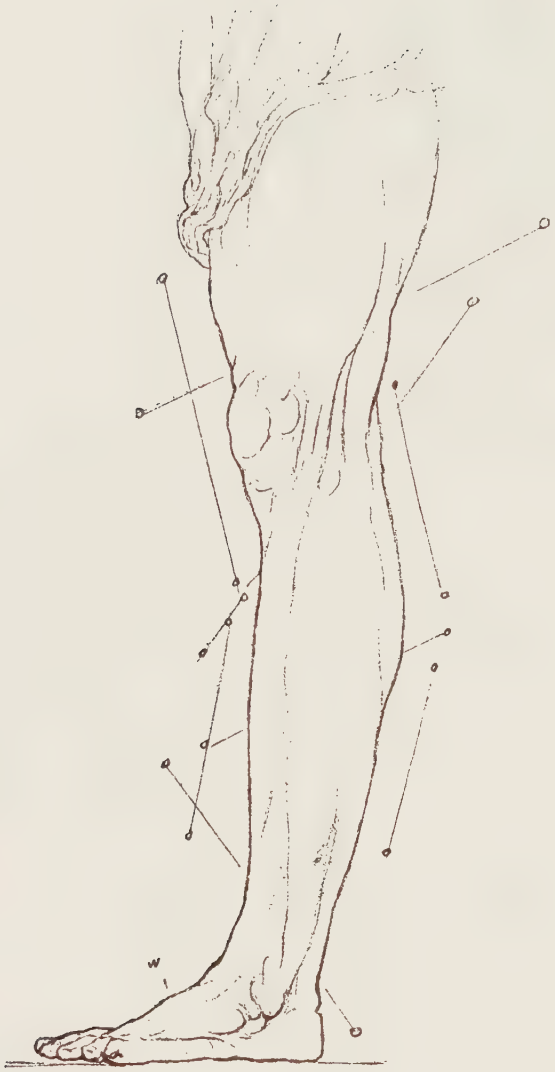
No. 88

No. 93
Terminal limit of Dorsal Surface

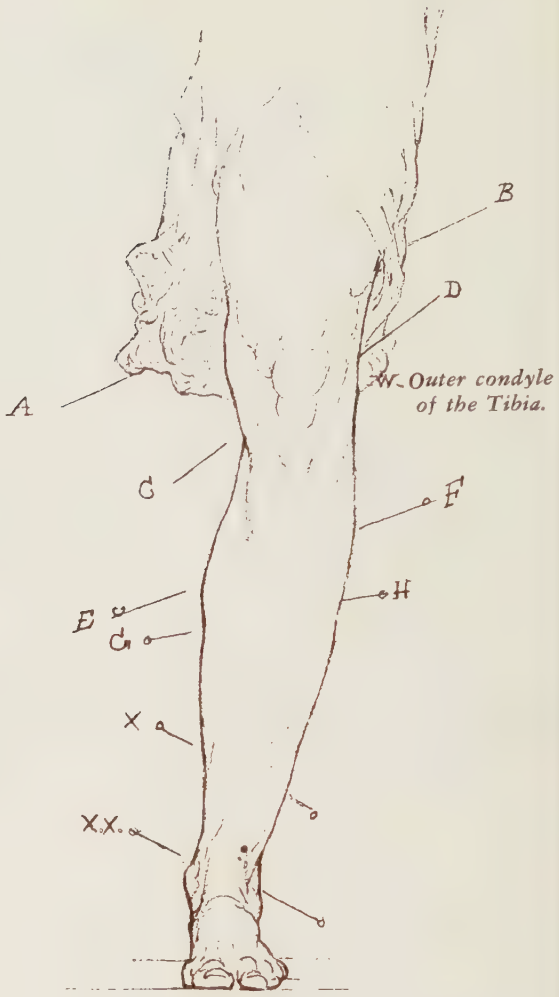
No. 91
Inside view

No. 89

The Plantar Integument extends upon the first bones of the Phalangeal Range halfway to the first free joint.

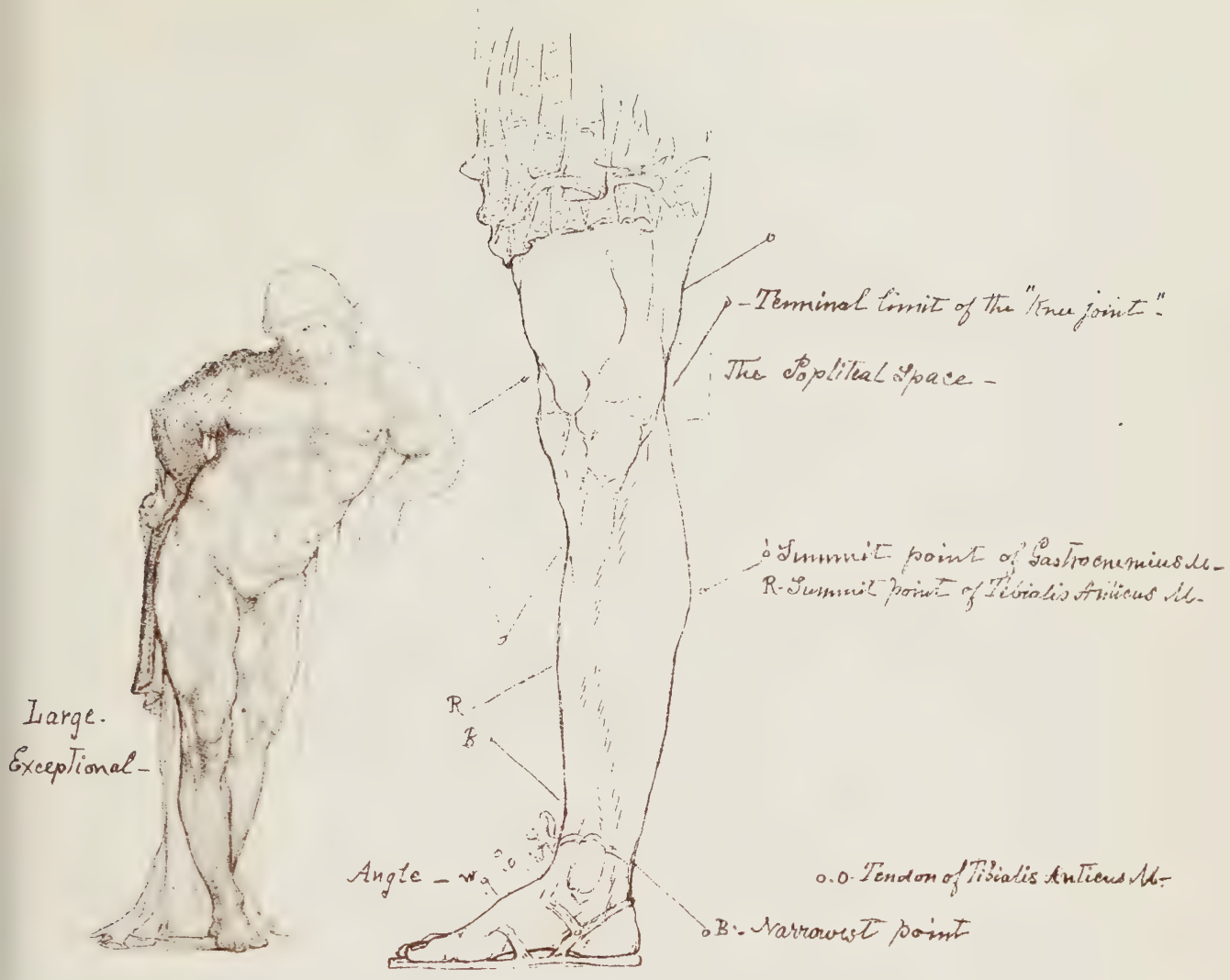


No. 94
Outside view — Ordinary

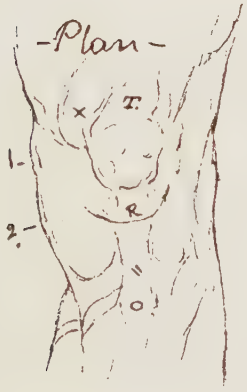


No. 95
Average proportions — Unidealized
Points of interest

A to B. Line of direction from The Superior Eminence of the Knee joint to the point above the Tendons at which the Vastus Externus muscle comes upon the outline.
C to D. From the point at which the Gastrocnemius disappears behind the bones of the Knee to narrowest point above the outer condyle of the Tibia.
E to F. The most prominent or Summit points of the inner and outer Sections of the calf of the leg.
GH. to VX. Shank Sections.
X to X.X. Section of the Tibia in which that bone comes upon the outline. This Section is longer in proportion as the muscles are smaller or the integument thinner. The Ankle should be thin and broad, the Shank long, and the Instep high. The highest average gives 6-1/2 times the length of the foot in the length of the whole body.



No. 96
Inside view — Unidealized



x. Fold of Integument above the Knee.
R. Fold of Integument below the Patella.
T. Central Tendon of Triceps.
v. Outer Condyle of Tibia.
ll. Ligamentum Patellae.
o. Kneeling point.

The fold of integument marked x is exhausted when the leg is bent.

No. 97

No. 98

When the arm is elevated, the Deltoid Muscle is turned toward the Back. Its several limbs, viz., Clavical, Acromial, and Scapular being distinctly visible. This section embracing as it does the Acromion and the end of the Clavicle is the boundary line between the upper attachments of the limbs of the Deltoid and as much of the back as lies above the Spine of the Scapula.

No. 99

See Skeleton Sections.

Shoulder joint, three-quarters view seen from above; Acromio-Clavicular Circle;the boundary line between the muscles of the Chest and Shoulder and those of the Cervical Section of the Back. The lowest point of Clavicular depression is the top of the Sternum.

No. 100

Extension by Force. The Shoulder against the side of the Face; the Scapular limb of the Deltoid upon the outline; the Scapula upon the outline. The Trapezial Space closed; the Clavicle against the Neck; the Pectoral Muscle nearly vertical; the Ribs Extended.

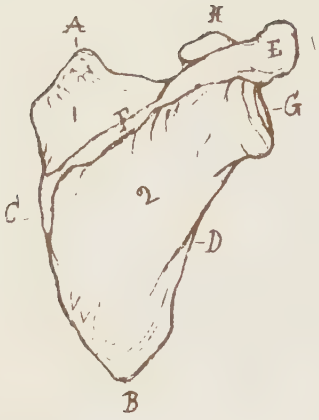
No. 101

Clavicular limb of Deltoid covering the acromial end of the Clavicle; the acromial end of Deltoid upon the outline. In proportion as the Clavicle is elevated; the Shoulder must approach the Side of the Neck; the Trapezial Section being shortened and elevated.

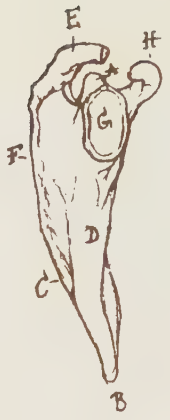
No. 102

No. 103
Shoulder seen from above

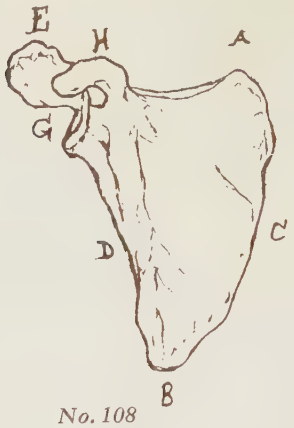
No. 104
The apex from the outline



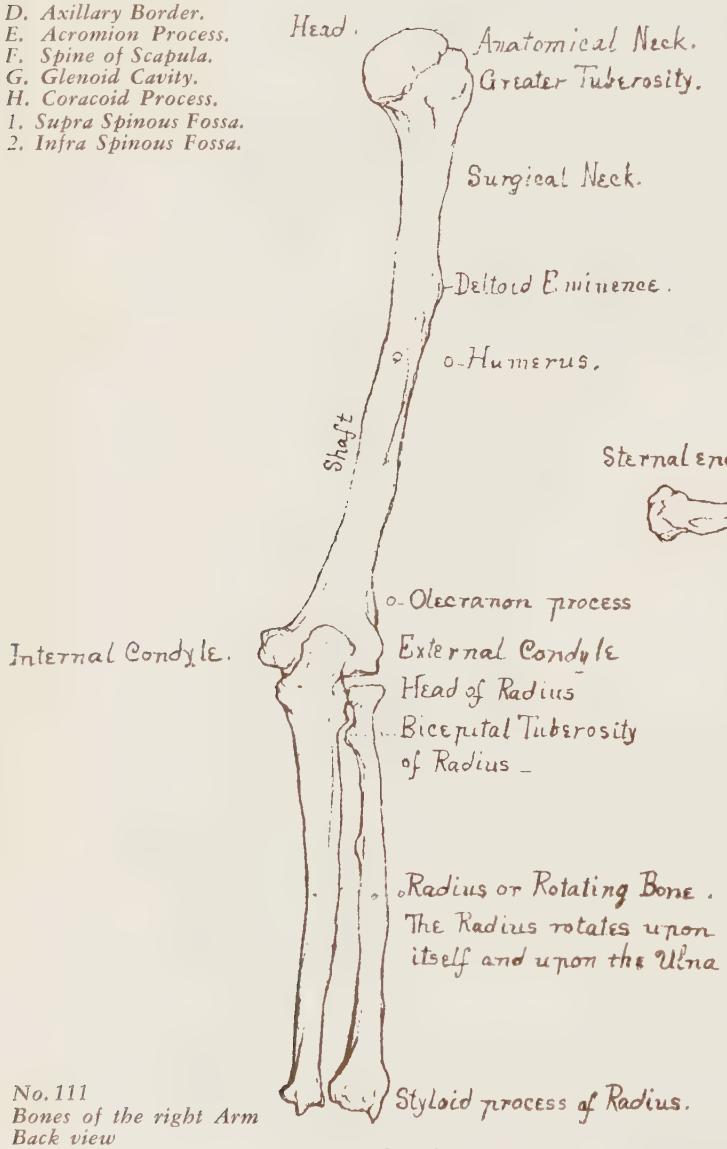
No. 106
Scapula
Posterior view
A. Superior Angle
B. Inferior Angle.
C. Vertebral Border.
D. Axillary Border.
E. Acromion Process.
F. Spine of Scapula.
G. Glenoid Cavity.
H. Coracoid Process.
1. Supra Spinous Fossa.
2. Infra Spinous Fossa.



No. 107
Seen edgewise
Front view showing
the position of
the several parts

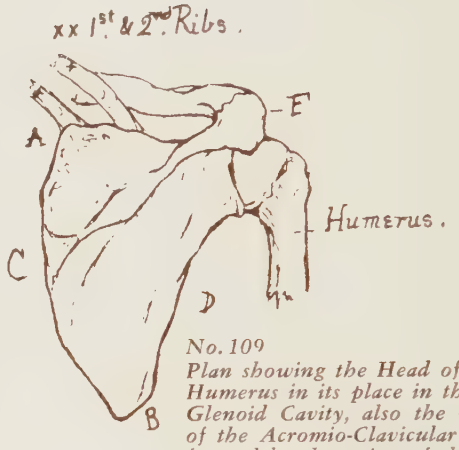


No. 108
Under side

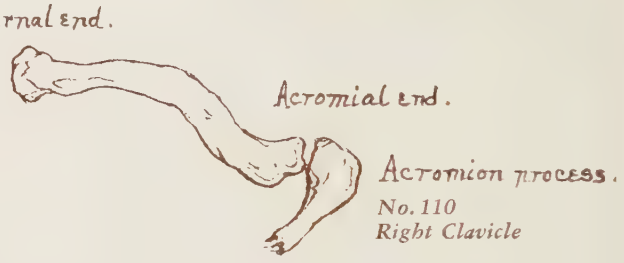


No. 111
Bones of the right Arm
Back view

Notice that the Humerus leans toward the Body; that the inner Condyle is larger, higher up, and sharper than the outer Condyle; that when the Arm hangs latent by the side, the Radius and Ulna turn from the Body.

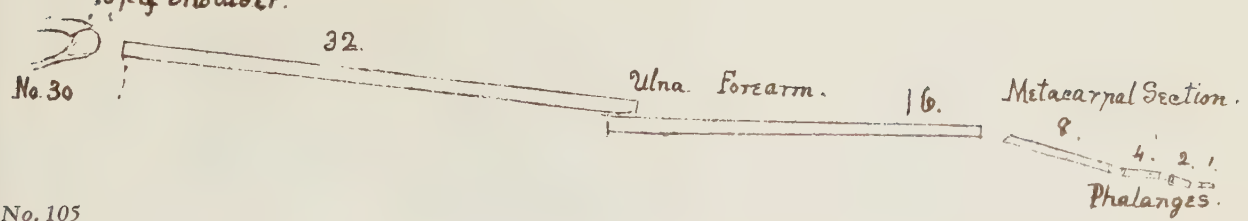


No. 109
Plan showing the Head of the Humerus in its place in the Glenoid Cavity, also the Circle of the Acromio-Clavicular Arch formed by the union of the Scapular and Clavicular Bones.



No. 110
Right Clavicle

No. 112
Side view
Shoulder Circle



No. 105
Humerus — Arm Sectional Plan

Comparative length of the Bones of the Arm, Forearm, and Hand. The numbers indicate in a general way the enlargement of proportions from the first Joint of the Fingers upward. Notice the direction of the several parts.

In the Arms of the Quadrumana the Humerus Section is in some, of the same length, and in others, shorter than the Section of the Ulna. In the Animal scale, with certain limited exceptions, the length of the Humerus is greater in proportion as the Animal is more perfectly organized. As the Humerus increases in length, the Hand is shortened.

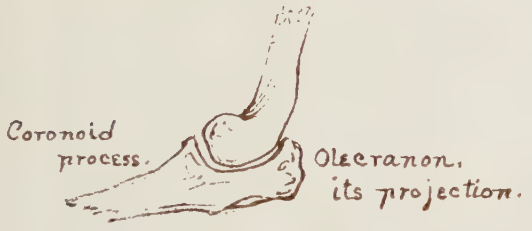
No. 114
Hand vertical

No. 116
Hand pronate or Palm downward
Outside view — Wrist thin
In this position the Ulna is above the Wrist.

No. 120

End of Ulna, projection beyond the line of the wrist.

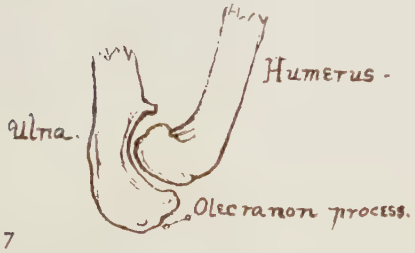
Radius covering the Ulna
Hand Supine.
To Assist in performing this motion, the Humerus rotates its External Condyle outward.



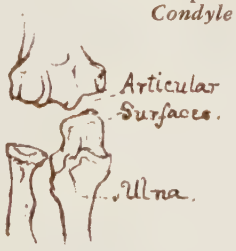
No. 113
Humerus

No. 115
Ligamentous hand holding the Head of the Radius in its place upon the outer Condyle of the Humerus

No. 119

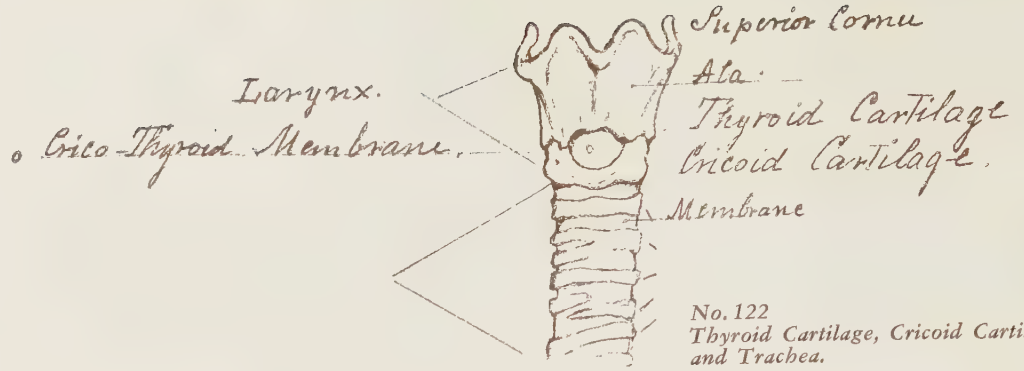


No. 117
These Plans show the place of the Olecranon when the Arm is flexed, and the flexion and extension result from the mechanism of this Joint alone. The Radius being attached to the Ulna by Ligaments moves with it.

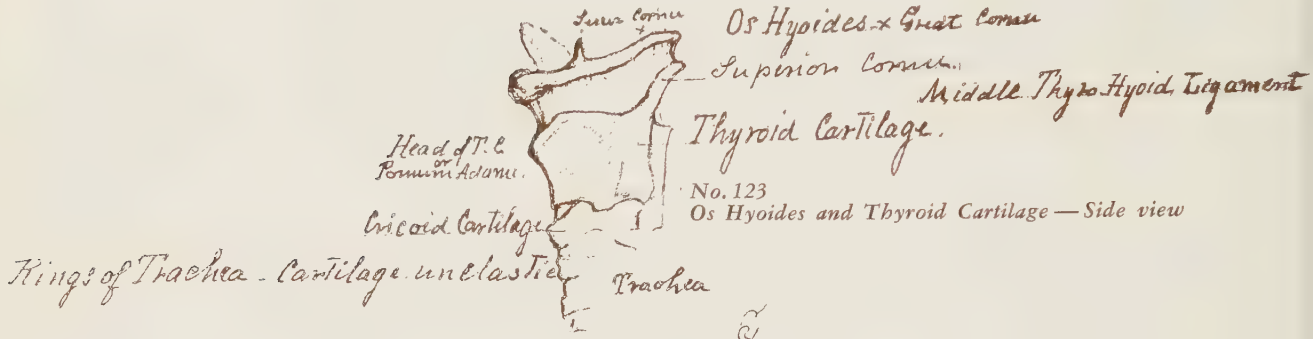


No. 118
Internal Condyle

No. 121
Elbow Section



No. 122
Thyroid Cartilage, Cricoid Cartilage, and Trachea.



No. 123
Os Hyoides and Thyroid Cartilage — Side view

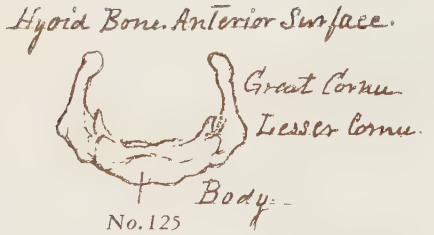
No. 126
Plan -
Anatomical Section of central organs of the Throat - Under Jaw seen from beneath. Lateral extension - Right

No. 124

Showing the place of the Thyroid Cartilage and parts associated in the formation of the Neck.

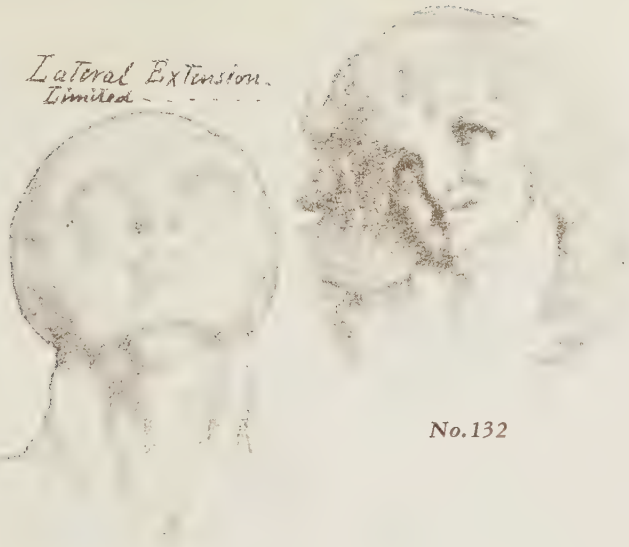
1. *Chin.*
2. *Os Hyoides.*
3. *Thyroid Cartilage.*
4. *Cricoid Cartilage and upper Trachea.*
5. *Tendon of Sterno-Cleido Mastoideus Muscle.*

The Hyoid Bone marks the limits of the Sub-Maxillary Section x on front and upon the sides of the Throat as far back as the angle of the Jaw. The Sub-Maxillary Section extends upon the Hyoid Bone. See No. 129, No. 130.



No. 125
Hyoid Bone — Anterior Surface

No. 137
Thyroid cartilage as seen from above. Notice the direction of its planes.



No. 132

No. 131
Form of the Thyroid Cartilage and Trachea during early infancy.

No. 133
Thyroid Cartilage — Front view

No. 128

No. 130

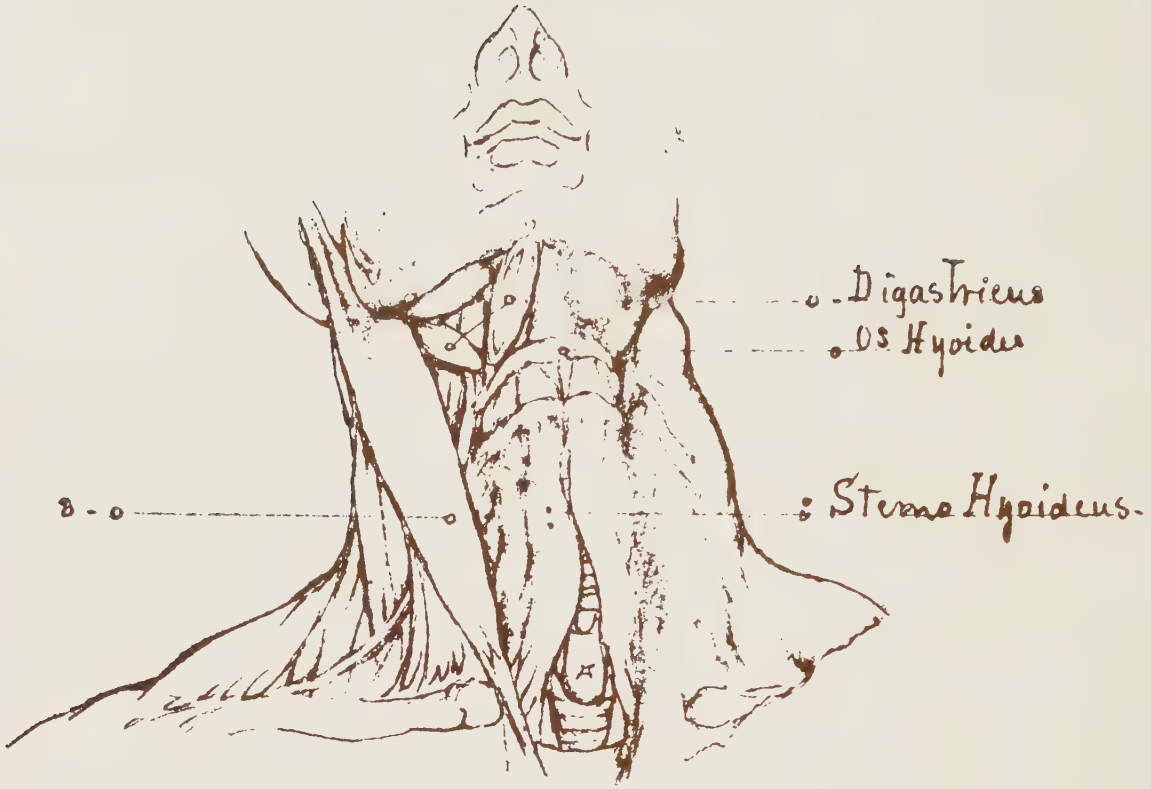
No. 129
Female form

No. 127
Thyroid small, Neck short.

No. 136

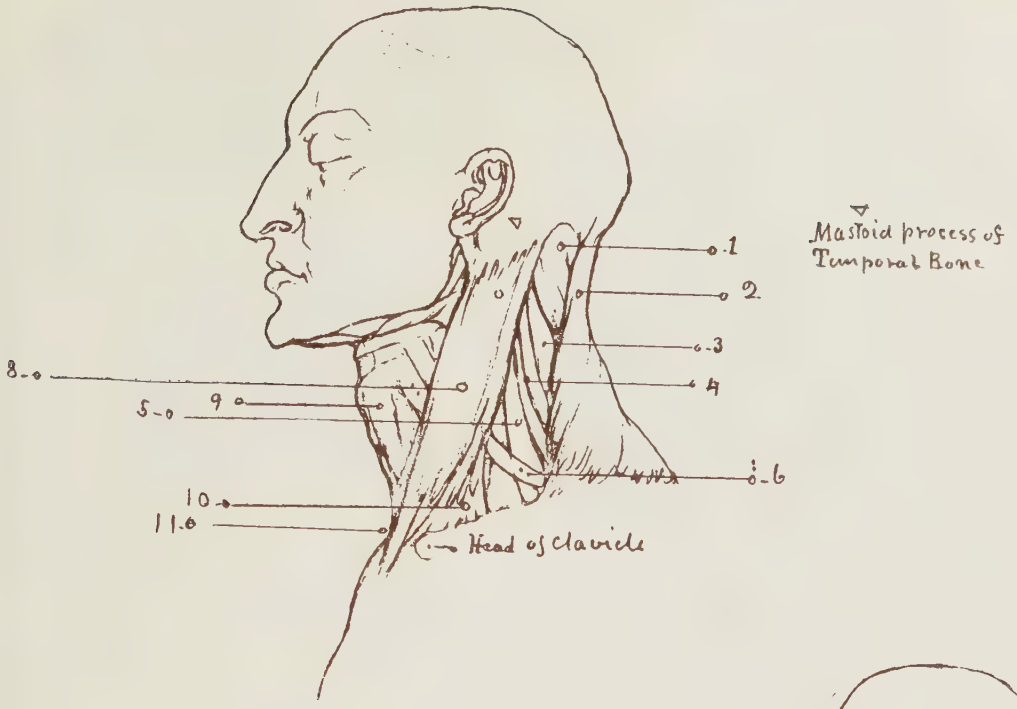
No. 134
A — Place of the Thyroid Cartilage where the neck is flexed.

No. 135



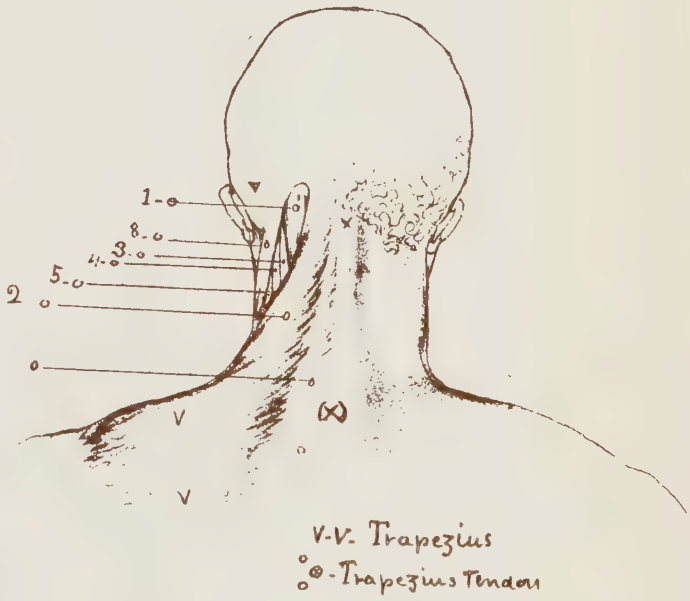
No. 139
Anatomical Section — Front view

When the muscles are in action, the points of attachment are brought together, more or less, in proportion as the action is intense or the mechanism of the parts permits. The point of origin is that toward the body; the point of insertion is that toward the extremities. Ordinarily, the point of attachment moves toward the point of origin. When the point of attachment becomes fixed, the point of origin moves toward it. By the action of the Sterno-Mastoid and associate muscles of the side of the neck, the head is made to rotate upon the cervical column toward the shoulder, on the side opposite that on which the acting muscles are situated. Muscular action sends the blood to the surface of the body. The muscles are larger when in action than when at rest. Thin muscles act in straight lines often in fibrous lines, making the skeleton visible. In the Male body the integument is firm and closely adherent to the part beneath when the muscles are fully developed. Flexion is more forcible than Extension. Avoid skeleton outlines. Make no display of technical anatomy. A work of art should be something more than the solution of a problem in science. For the bones of the neck, see Nos. 122-126.



No. 138

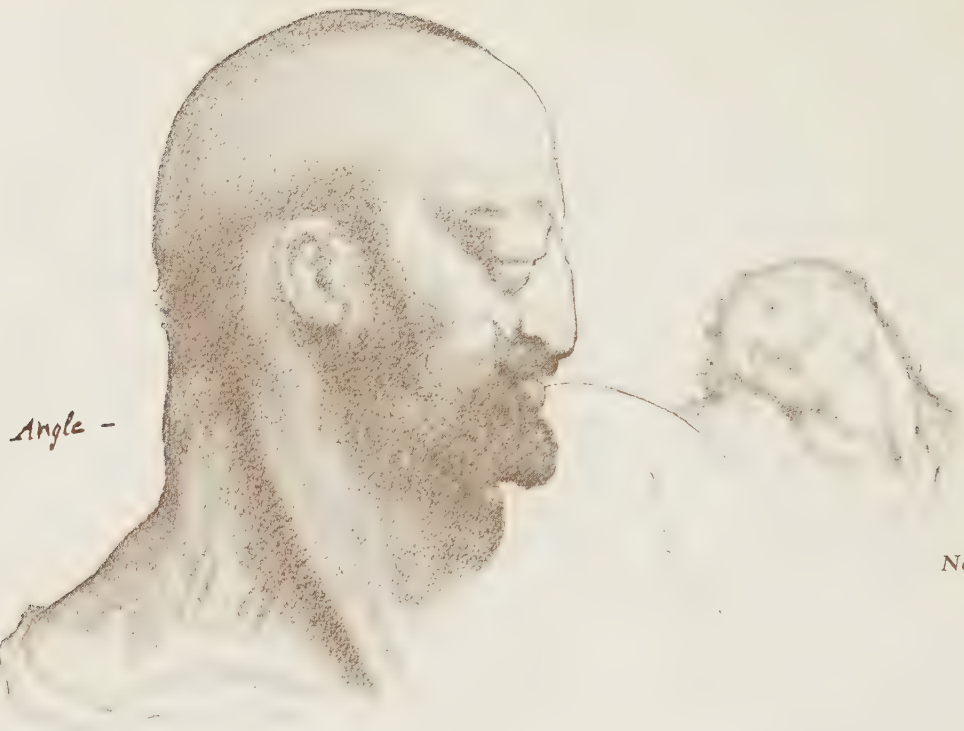
8. Sterno-Cleido-Mastoideus. Arises by two heads from the Sternum and Clavicle, and is inserted by a strong tendon into the outer surface of the Mastoid Process of the Temporal Bone.
10. The clavicular limb occupies the inner third of the upper border of the Clavicle.
1. Splenius. The External portion arises from the spinous processes of four or five dorsal and the seventh cervical vertebrae, and is attached to the external surface and posterior border of the Mastoid Process.
2. Trapezius, Cervical portion. Arises from the inner third of the Superior curved occipital line from the spinous processes of all the cervical vertebrae, and is attached to the outer third of the clavicle to the inner border of the Acromion process, and by its dorsal fibres to the superior border of the spine of the Scapula. See Skeleton Sections.
3. Levator-Anguli Scapulae. Arises from the transverse processes of the three or four superior cervical vertebrae, and is inserted into the superior angle of the Scapula.
4. Scalenus Posticus. From the first rib to the transverse processes of the six lowermost cervical vertebrae.
5. Scalenus Articus. From the first rib to the transverse processes of the third, fourth, fifth, and sixth cervical vertebrae.
6. Omo Hyoides. Arises from the superior border of the scapula behind the coracoid notch, and is inserted into the lower part of the body of the Os Hyoides externally to the Sterno Hyoid.
9. Sterno Hyoideus. Arises from the inner end of the clavicle behind the tendon (11) of the Sterno Mastoid (9) and is inserted into the Os Hyoides.



No. 140
Back view of the muscles of the neck.
Muscular form. Integumentary form.

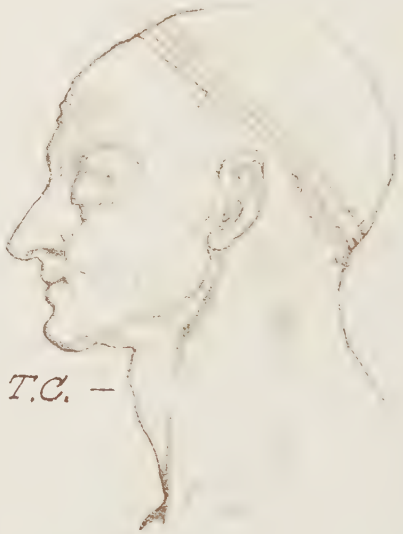
x. Ligamentum Nuchae. A thin band of condensed cellulo-fibrous membrane, extending from the Occipital protuberance to the spinous process of the seventh cervical vertebra.

(x). Seventh cervical vertebra.



No. 142

No. 141
Principal use of the Sterno-Mastoid Muscle



No. 145

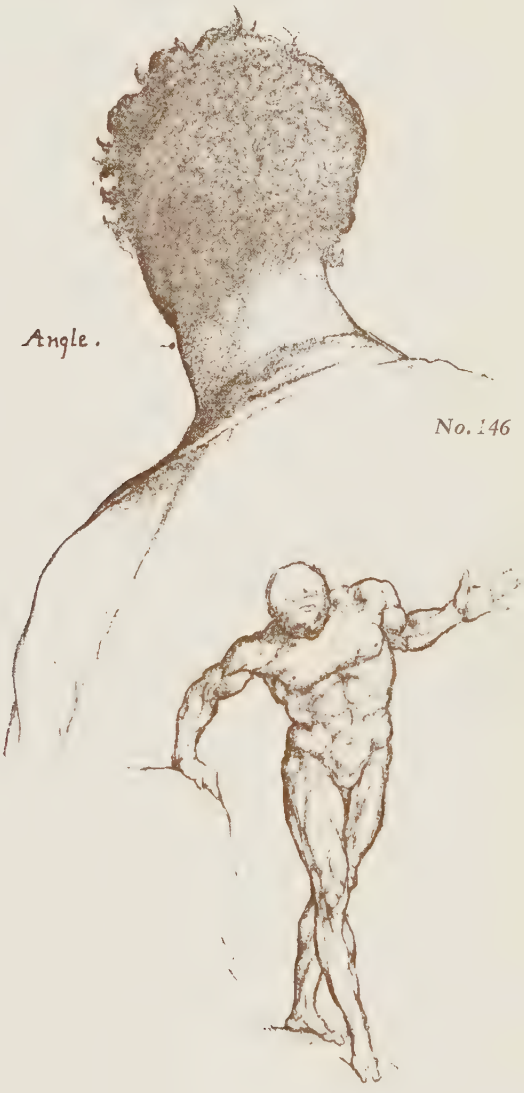
No. 144

No. 143
The Thyroid Cartilage is smaller in Women than it is in Men. The Thyroid Gland is larger in Women than it is in Men. Consequently in Women the Neck below the Thyroid Cartilage should be somewhat fuller than it is in Men.

No. 148

No. 149

No. 147
Lateral Extension — Outlines obscure



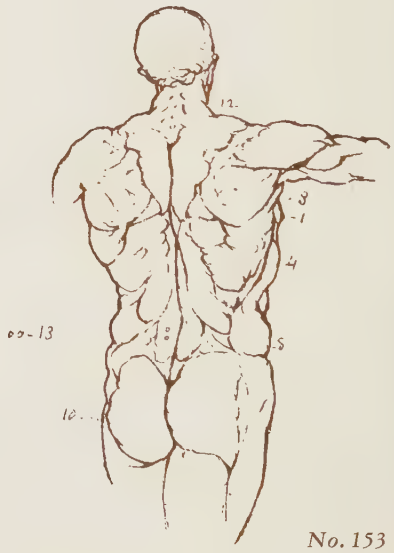
No. 146

No. 150
Extension

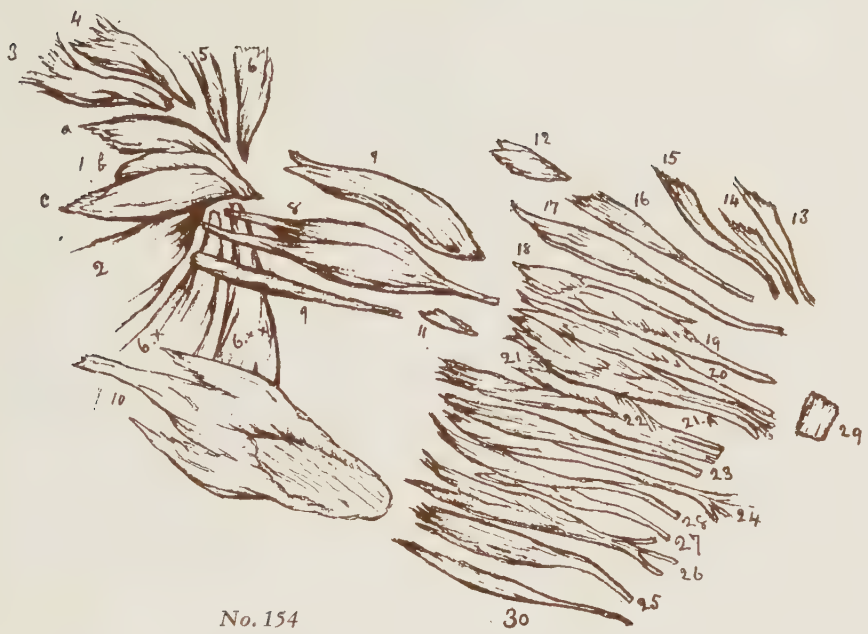
No. 151

1. *Pectoral Section.*
2. *Axilla.*
3. *Scapular Section.*
4. *Costal Section.*
5. *Epigastric Section.*
6. *Super Umbilical Section.*
7. *Umbilical Section.*
8. *Flank Section.*
9. *Pubic Section.*
10. *Gluteal Section.*
11. *Cervical Section.*
12. *Trapezial Section.*
13. *Lumbar Section.*

No. 152



No. 153



No. 154
Muscles of the Arm

1. *Deltoid.*
   a. *Scapular Limb.*
   b. *Acromial Limb.*
   c. *Clavicular Limb.*
2. *Pectoralis Major.*
3. *Super Spinatus.*
4. *Infra Sinatus.*
5. *Teres Minor.*
6. *Teres Major.*

6x. *Subscapularis.*

6xx. *Latissimus Dorsi.*

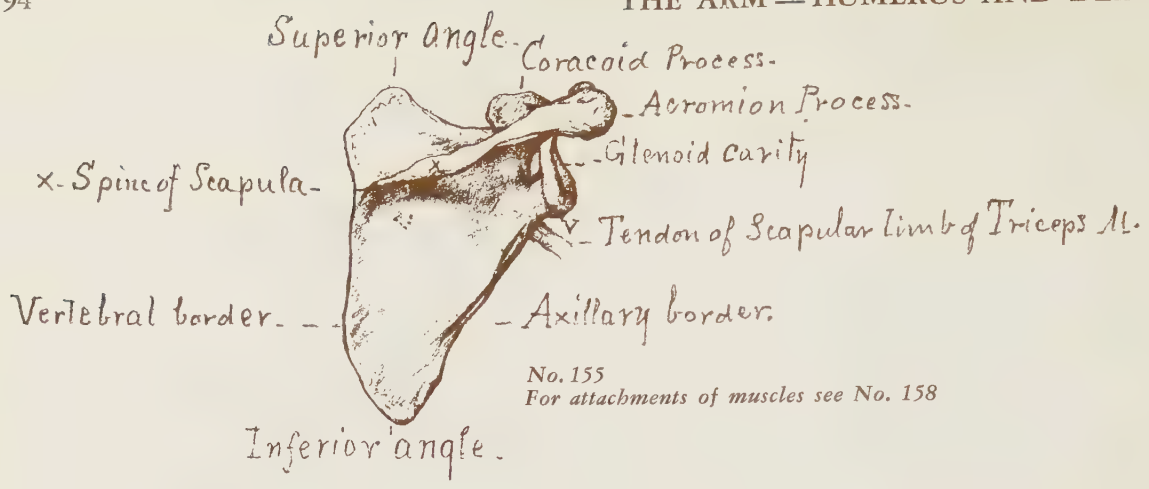
7. *Brachialis Anticus.*
8. *Biceps.*
9. *Coraco Brachialis.*
10. *Triceps.*
11. *Subanconeous.*
12. *Anconeus.*
13. *Extensor Secundi Internii Pollocis.*
14. *Extensor Primi Internodii Pollicis.*
15. *Extensor Ossis Metacarpi Pollicis.*
16. *Extensor Carpi Radialis Longior.*
17. *Supinator Longus.*
18. *Supinator Brevis.*
19. *Flexor Longus Pollicus.*
20. *Extensor Carpi Radialis Brevior.*
21. *Flexor Profundus Digitorum.*

21A. *Flexor Sublimis Digitorum.*

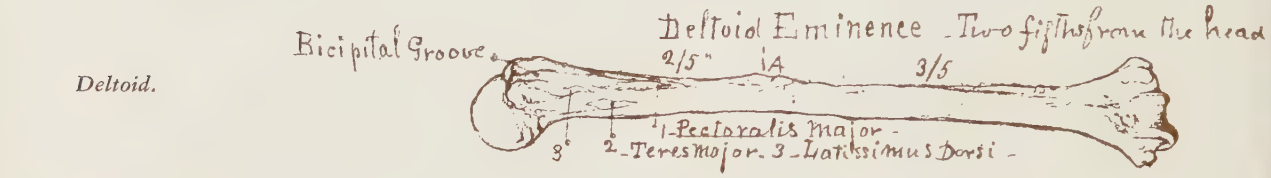
22. *Pronator Radii Teres.*
23. *Flexor Carpi Radialis.*
24. *Palmaris Longus.*
25. *Flexor Carpi Ulnaris.*
26. *Extensor Communis Digitorum.*
27. *Extensor Minimi Digiti.*
28. *Extensor Carpi Ulnaris.*
29. *Pronator Quadratus.*
30. *Extensor Indicis.*

In man the mechanism of the arm is complete. The bones increase in length and the muscles in size from the fingers upward. No part is covered by the proper integument of the side. The shoulder projects beyond the side of the body. Its movements are unrestrained. They are not subordinate to locomotion. The arm is an instrument of prehension; in it, flexion is unrestrained by any mechanical contrivance, and constitutes its principal use. Extension is limited by special contrivances. Masculine proportions find strongest expression in the parts devoted to the movements of the arm, viz., the muscles of the Chest, the Shoulders, and the Back, the Clavicles, the Scapular and the Humeral Bones.*

**As in the lower animals.*

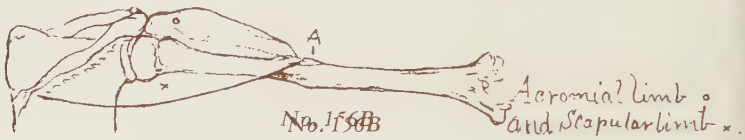


No. 155
For attachments of muscles see No. 158

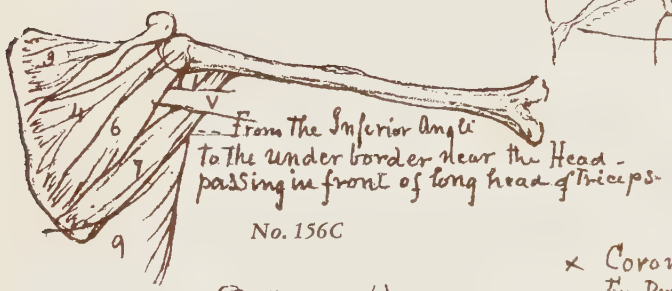


No. 156
Humerus — Anterior view

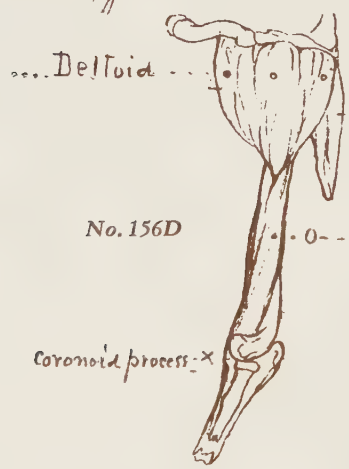
No. 156A



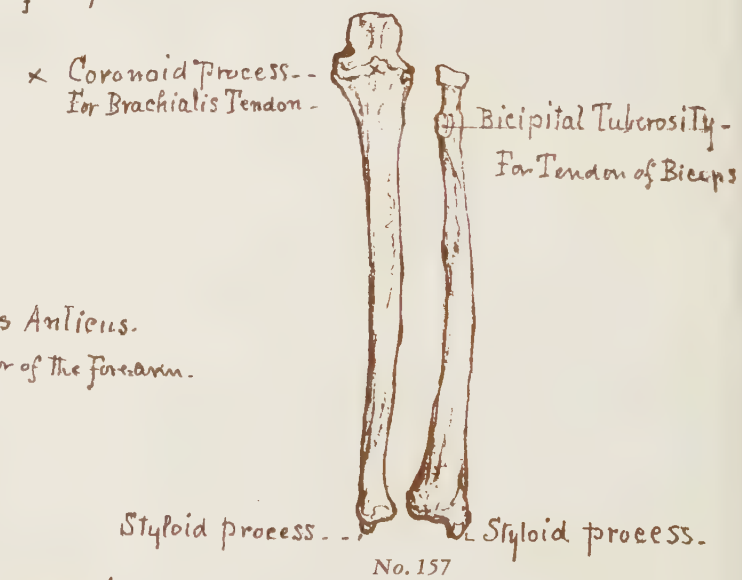
No. 156B



No. 156C

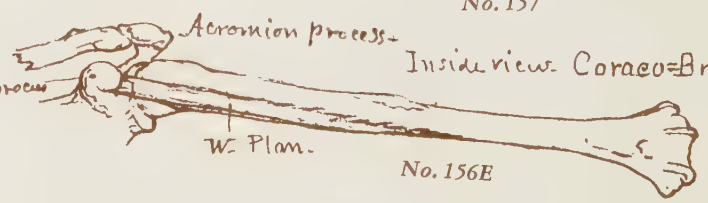


No. 156D

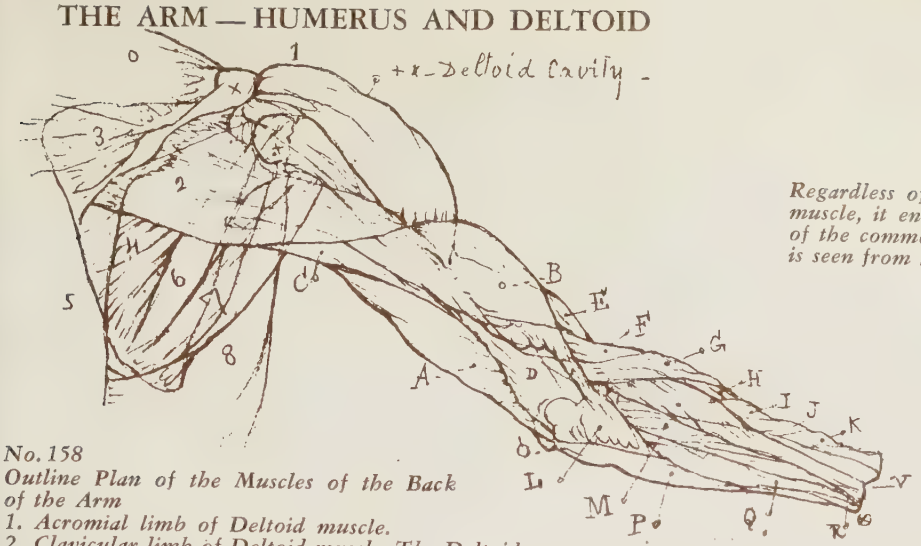


No. 157

Plan of Spine showing the points of attachment of the Deltoid and Trapezius Muscles.



No. 156E



Regardless of the actual place of a muscle, it enters into the composition of the common mass to the extent to which it is seen from the point of view taken.

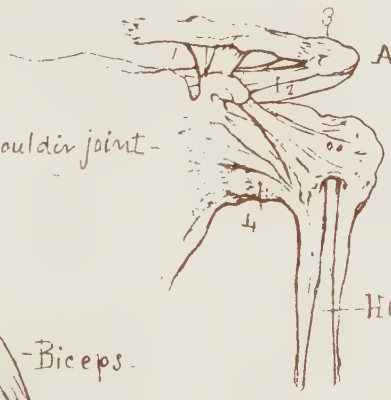
No. 158
Outline Plan of the Muscles of the Back of the Arm

1. *Acromial limb of Deltoid muscle.*
2. *Clavicular limb of Deltoid muscle. The Deltoid muscle has three limbs. It surrounds the Shoulder joint, covering it on its outer side, and in front and behind. It arises in front from the outer third of the clavicle, on the side from the Acromion process, and behind from the Spine of the Scapula. It terminates in a thick Tendon which is attached to the Humerus at the point A. See Fig. 156.*
3. *Supra Spinatus.* 6. *Teres Minor.*
4. *Infra Spinatus.* 7. *Teres Major.*

C. Longhead or Scapular limb of Triceps. See V, No. 155. For points of origin and insertion, see No. 156C.

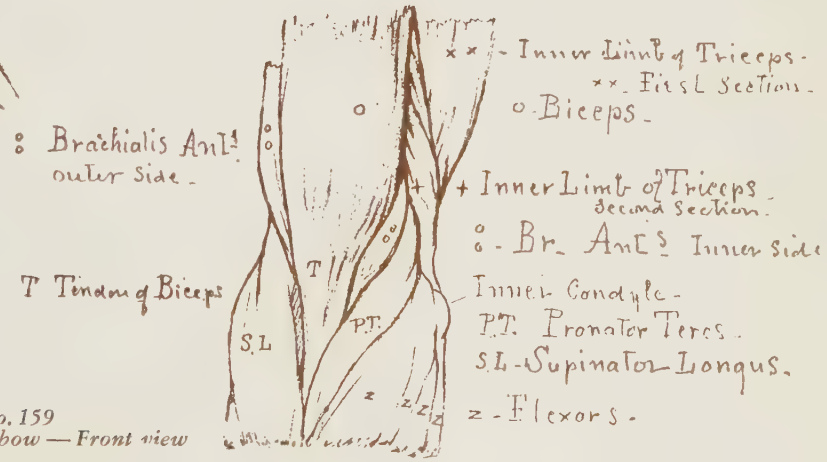
8. *Latissimus Dorsi. See 3, No. 156.*

A. Inner limb of Triceps. *B. Outer limb of Triceps.*
D. Tendon of Triceps (fourth limb, artistic classification).
E. Brachialis Anticus — O, No. 156D. Arises from the Humerus, at the insertion of the Deltoid, passes in front between condyles, and is attached to the Coronoid process of the Ulna, see x, No. 157. It is covered at the Elbow by the Biceps except upon the inner side above the Condyle — ⁝ No. 159. W, 156e — Coraco-Brachialis. From the Coracoid process to the middle of the Humerus lower border.
O. Acromial limb of Trapezius.
X. Acromion process.
X. Head of Humerus.

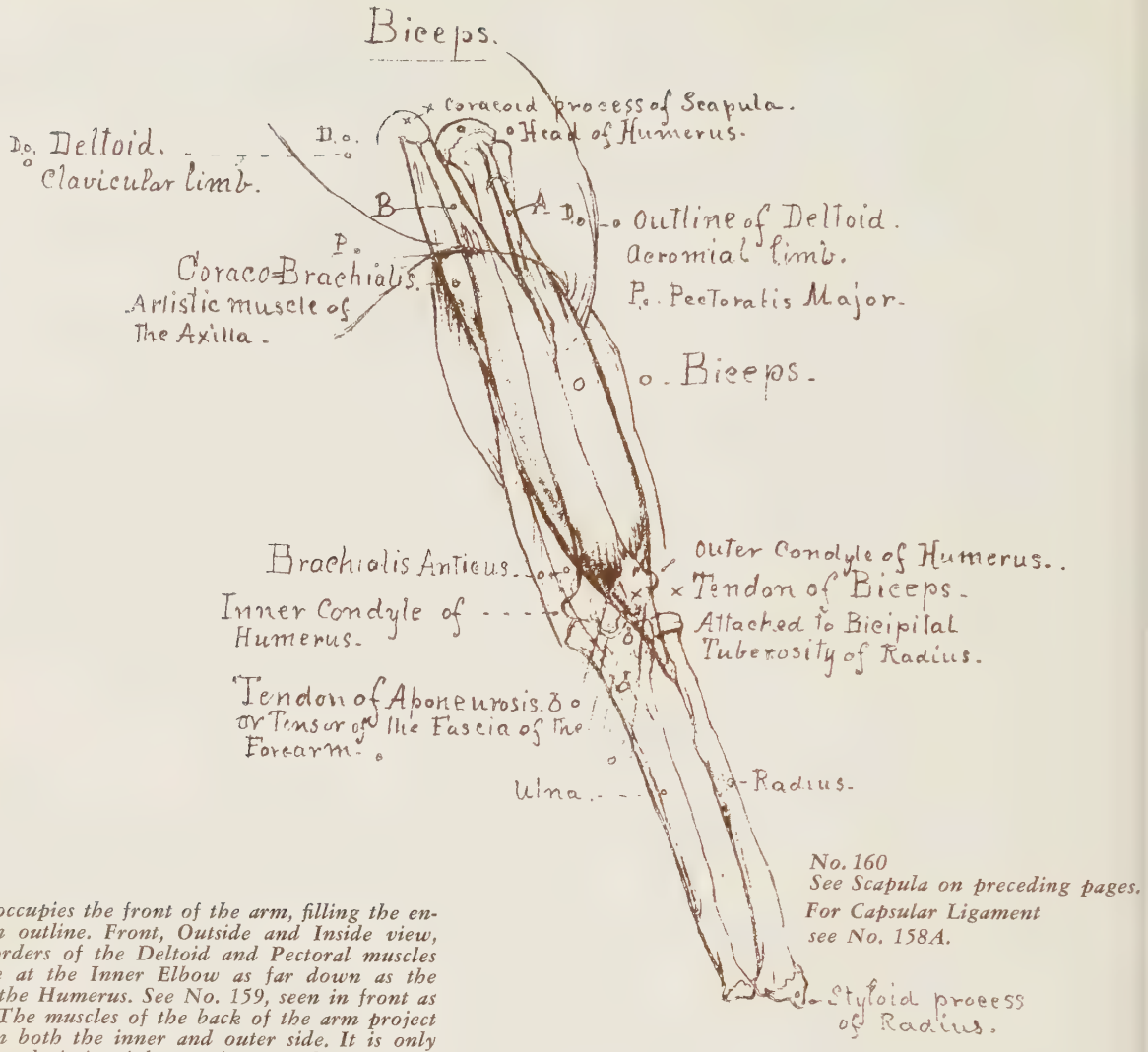


No. 158A

1. *Coraco-Clavicular Ligament*
2. *Coraco-Acromial Ligament*
3. *Acromio-Clavicular Ligament (Superior)*
4. *Capsular Ligament*



No. 159
Elbow — Front view

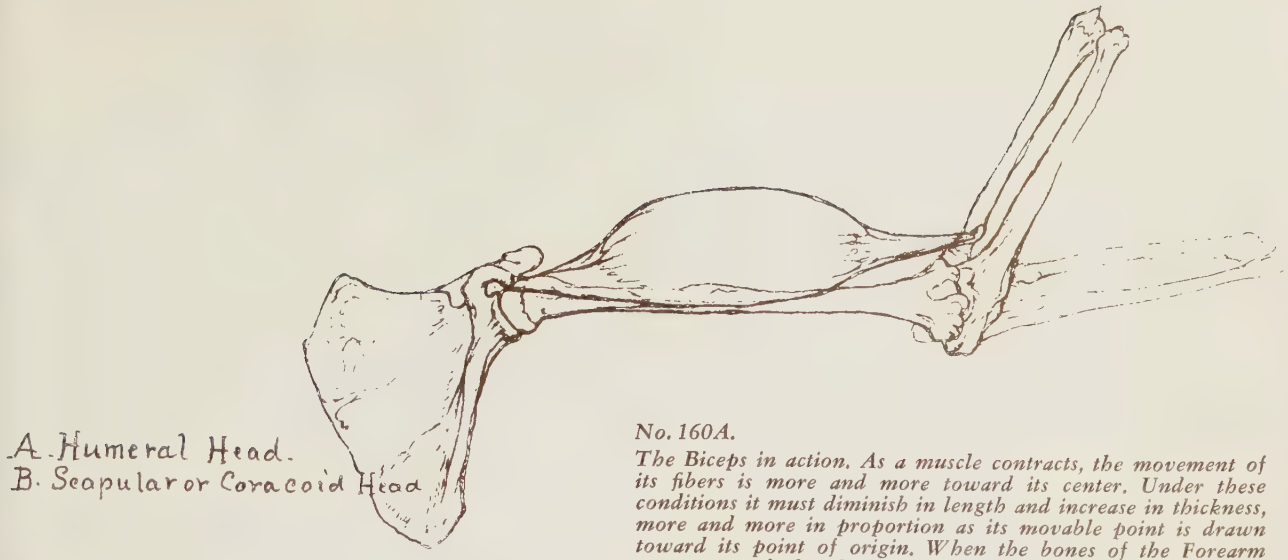


No. 160
See Scapula on preceding pages.
For Capsular Ligament
see No. 158A.

The Biceps occupies the front of the arm, filling the entire space in outline. Front, Outside and Inside view, from the borders of the Deltoid and Pectoral muscles to the space at the Inner Elbow as far down as the condyles of the Humerus. See No. 159, seen in front as in No. 160. The muscles of the back of the arm project beyond it on both the inner and outer side. It is only when the muscle is in violent action or when the arm is thin that the tendonous limit of it can be discovered. The Integument of the Male arm is thin, thinner over the Biceps than over the Triceps. The muscles are the active organs of locomotion. In Men they give form to all parts of the body excepting the joints and the middle section of the field of the Abdomen. They are formed of bundles of reddish fibers and are endowed with the property of contractility. The names applied to the various muscles have been derived:

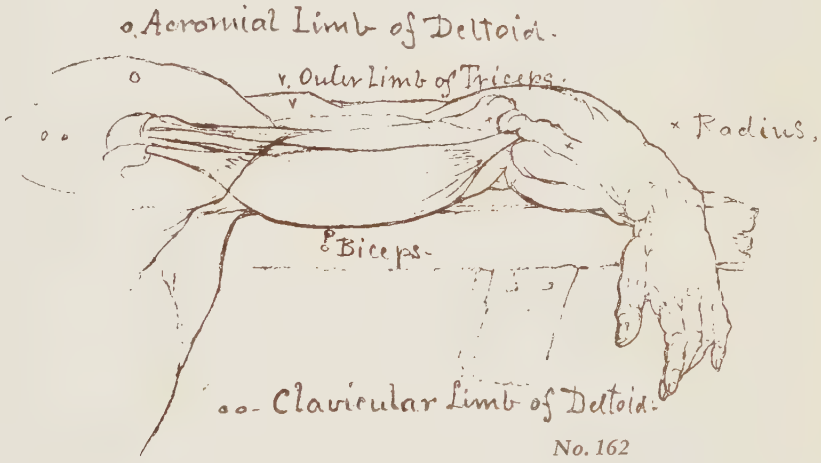
1. *From their situation, as the Tibialis, Radialis, Ulnaris.*
2. *From their direction, as the Rectus abdominis, Obliquus abdominis, Transversalis.*
3. *From their shape, as the Deltoid, Trapezius Pyramidalis.*
4. *From the number of their divisions, as the Triceps, Biceps; from the number of their heads.*
5. *From their points of attachment, as the Clavicular limb, the Sternal limb, the Sterno-Cleido-Mastoid, etc.*

The Tendons are white, glistening, fibrous cords, varying in length and thickness, sometimes round, sometimes flat, and only slightly elastic. Aponeuroses are fibrous membranes of a pearly white color, iridescent, glistening, and similar in structure to the Tendons. The muscles are connected with the bones, cartilages, ligaments, and skin, either directly or through the intervention of fibrous structures, called tendons or aponeuroses. The Biceps of the arm is the finest muscle in all the body; its contractile and tendonous portions are alike illustrative of the mechanism of the muscles themselves throughout the body, and the way in which their forces are applied. The muscles are enclosed in sheaths of dense, inelastic, and unyielding fibrous membrane called Fasciae. When a Tendon is broad and thin, it is styled Aponeurotic. The Aponeuroses of investment form a sheath for the entire limb as well as for each individual muscle. See Femoral Fascia.

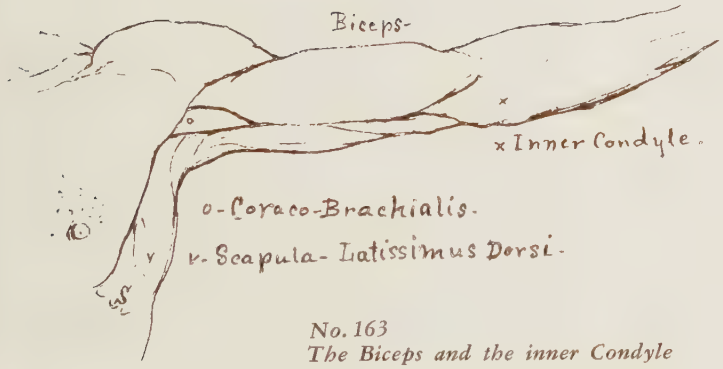


No. 160A.
The Biceps in action. As a muscle contracts, the movement of its fibers is more and more toward its center. Under these conditions it must diminish in length and increase in thickness, more and more in proportion as its movable point is drawn toward its point of origin. When the bones of the Forearm move toward the shoulder, the Biceps is a Flexor. When it acts only upon the Radius causing it to revolve, it is a Supinator.

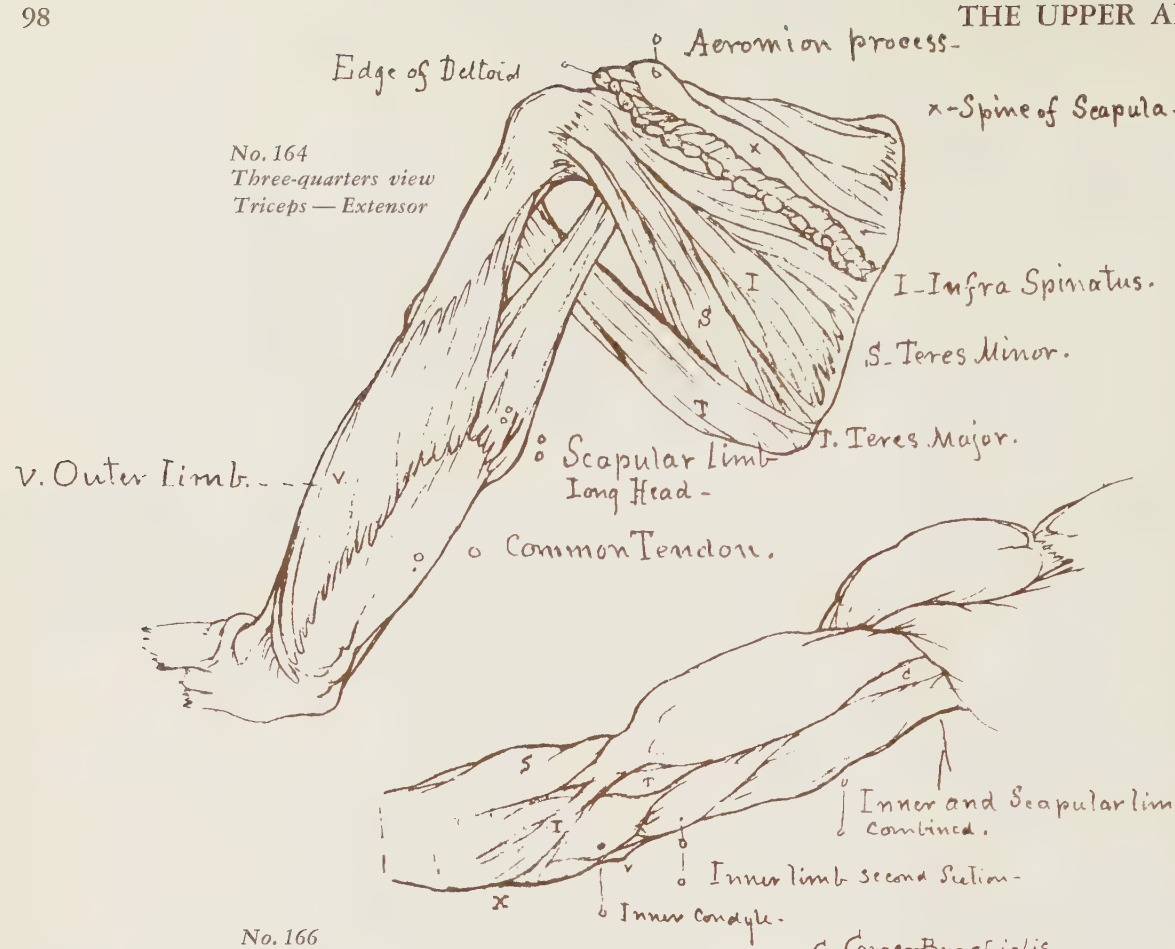
No. 161
The Biceps in position as a Supinator



No. 162

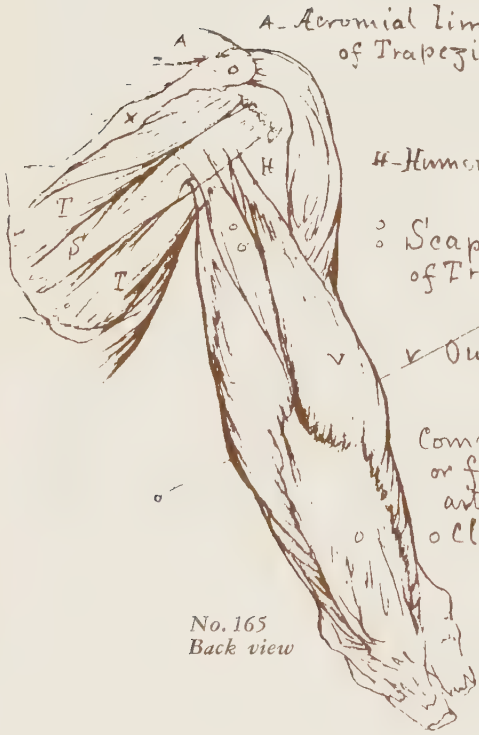


No. 163
The Biceps and the inner Condyle
The Axilla extends from the outer end of the Coraco-Brachialis Muscle to the tongues of the Serratus S.



No. 164
Three-quarters view
Triceps — Extensor

No. 166
The upper arm — inside view



No. 165
Back view

The Triceps is situated on the back of the arm, extending the entire length of the Humerus. It is of large size, and is divided above into three parts named the middle or long head, the external head, and the internal head. The middle head arises immediately below the glenoid cavity of Scapula. See No. 165. The Teres Major (posterior view as seen in No. 164), and, crossing the space between the axillary border of the Scapula and the Humerus, unites with the common tendon of insertion o at the point : . . The external head arises from the posterior surface and external border of the Humerus; its fibers unite with those of the common tendon of insertion at its outer border, reaching to the elbow. The inner head arises from the posterior surface of the Humerus, below the groove for the Musculo-Spiral nerve, and, extending upon the inner side of the arm in the form and direction seen in the drawing No. 166, terminates upon the inside border of the common tendon, the contractile fibers extending to the elbow. See No. 148. The common tendon commences about the middle of the back part of the muscle and is inserted into the Ulna at the back part and upper surface of the Olecranon process.

No. 167 The upper arm — outside view

No. 168

No. 169A
o The Olecranon
: The carpal end of the Ulna

No. 169
Torsion inward, showing the place and action of the muscles. See preceding sections

No. 172
Front view

When the bones of the forearm are fixed in any position; latent, pronate, or supinate, the supinator becomes a flexor.

The Flexor muscles are also pronators. They arise from an associate tendon, situated at the inner condyle of the humerus, most of them having secondary attachments and terminate as here represented.

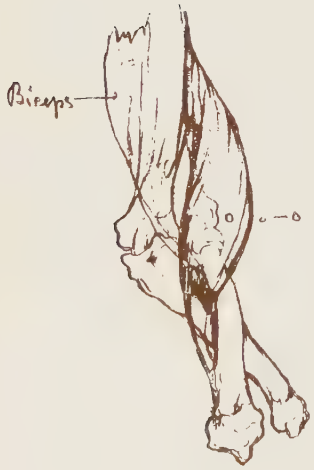
No. 170

Supinator Longus.
From the upper Two-thirds of external condyloid ridge of the Humerus, to the Styloid process of the Radius.

Tendon of Supinator Longus.

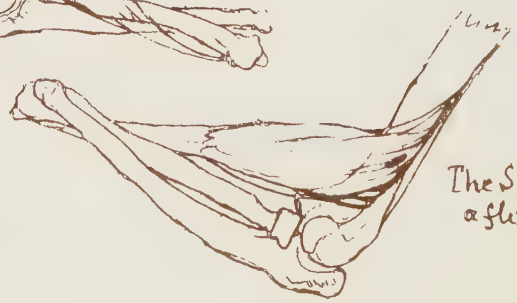
Styloid process of the Radius.

× Pronator Teres.
From the inner Condyle of the Humerus, obliquely across the forearm, terminating in a flat tendon, which turns over the outer margin of the Radius at the middle of its Shaft.

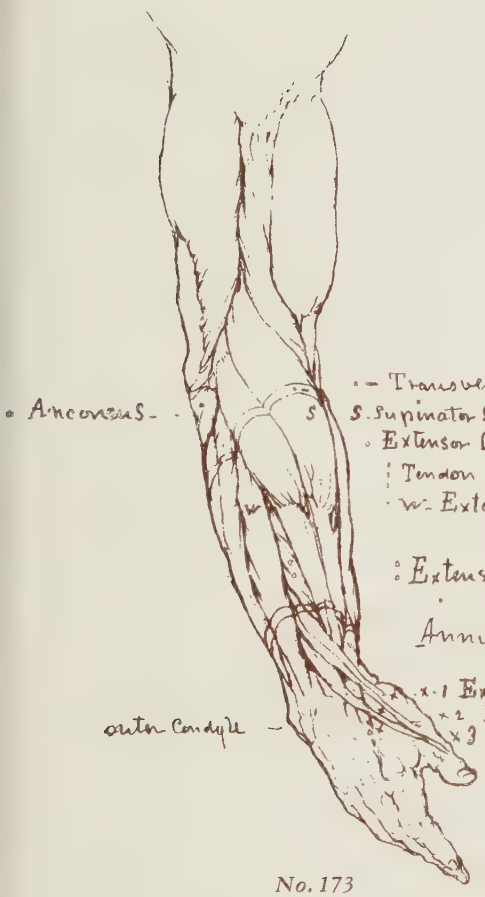


The Supinator as a Supinator.

No. 171



The Supinator Longus acting as a flexor.

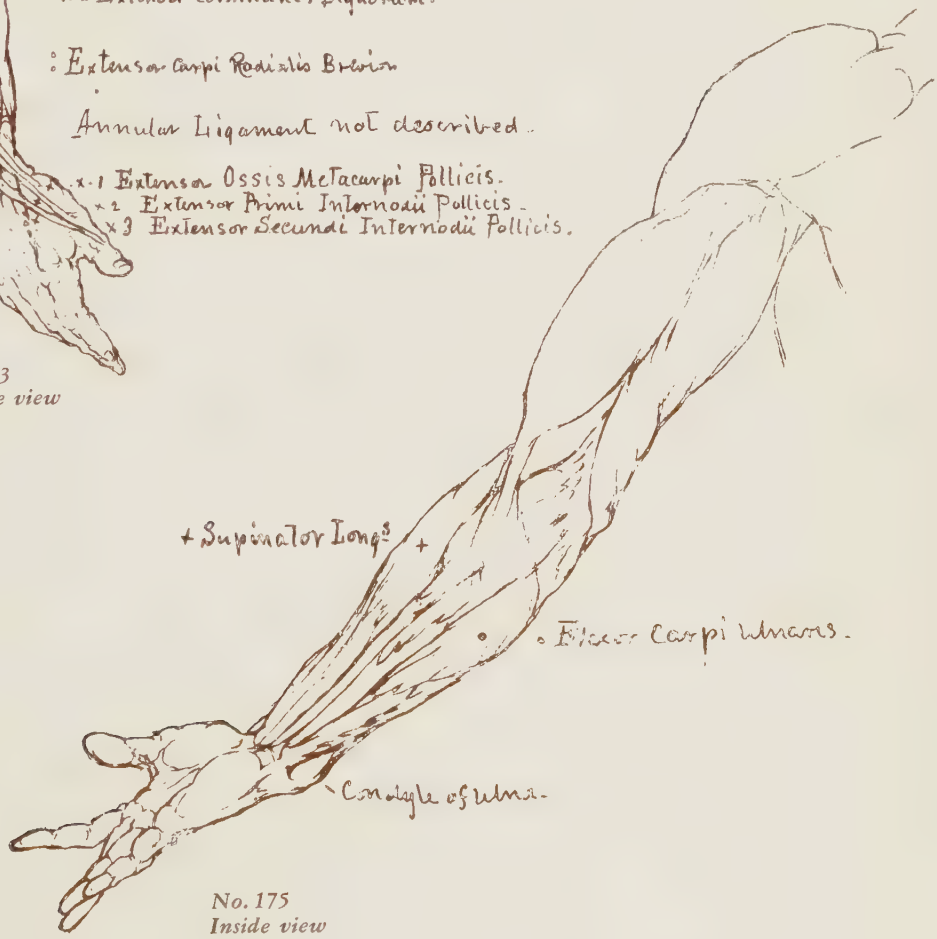


- Transverse "line of quantity"
S. Supinator Longus.
Extensor Carpi Radialis Longior
Tendon See Hand Sections.
W. Extensor Communis Digitorum.
Extensor Carpi Radialis Brevior
Annular Ligament not described.
x 1 Extensor Ossis Metacarpi Pollicis.
x 2 Extensor Primi Internodii Pollicis.
x 3 Extensor Secundi Internodii Pollicis.

No. 173
Outside view

Anconeus.
S. Supinator Longus.
x Extensor Carpi Rad. Longior.
W. Extensor Communis Digitorum.
x x x Muscles of the Thumb.

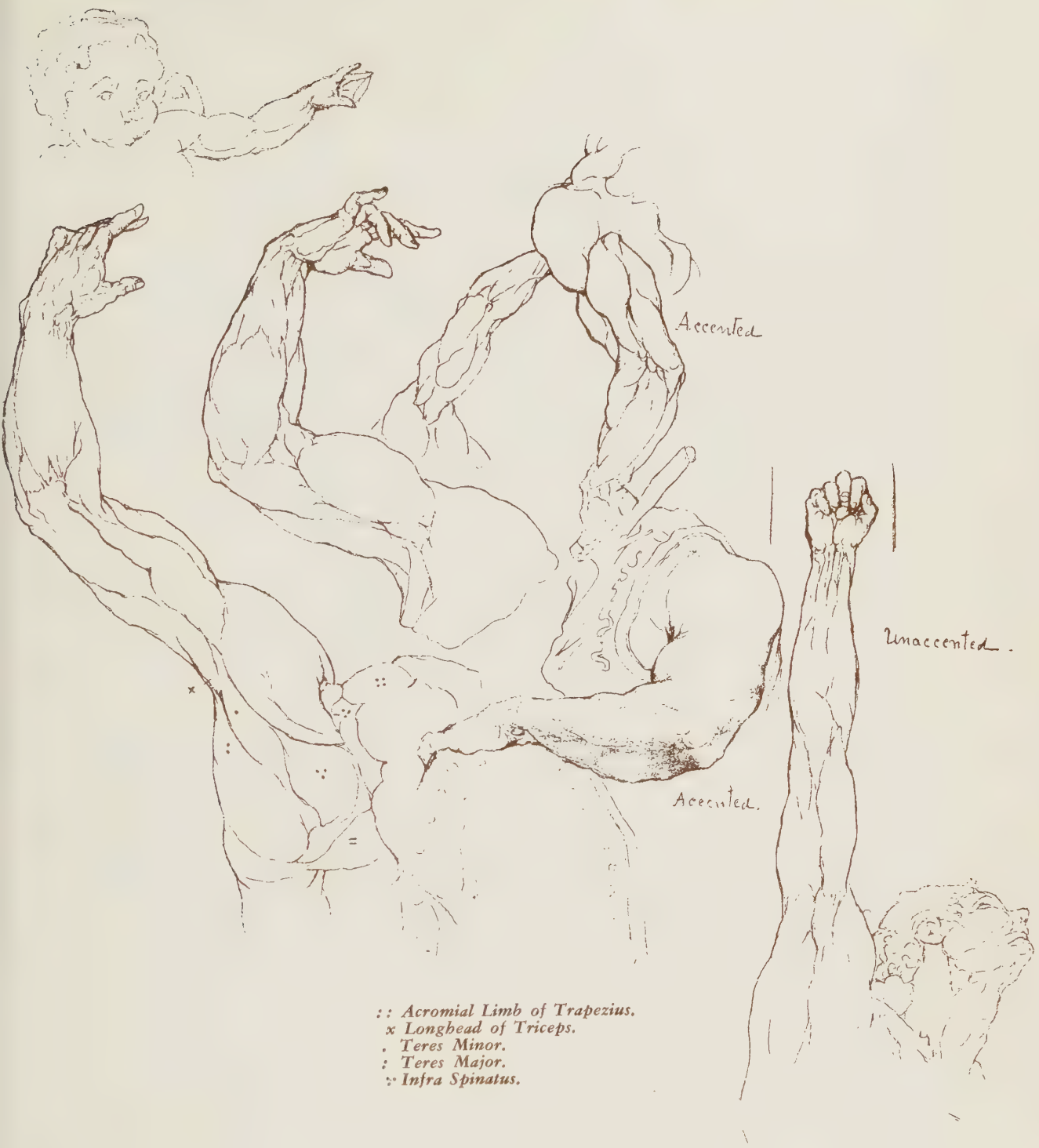
No. 174
Back view



+ Supinator Longus
Flexor Carpi Ulnaris.
Condyle of ulna.

No. 175
Inside view

No. 176
Use of the muscles as elements of proportion.
Details of structure, accented and unaccented, illustrated.



:: *Acromial Limb of Trapezius.*
x *Longhead of Triceps.*
. *Teres Minor.*
: *Teres Major.*
∴ *Infra Spinatus.*

Muscles

10. Rhomboideus. This muscle arises from the spinous processes of the seventh cervical and five superior dorsal vertebrae, and is inserted into all that part of the vertebral border of the Scapula situated below its spine. It is covered, except at its lower third, by the Trapezius. It is the artistic muscle of the Scapular field, as the Coraco-Brachialis is of the Brachial field on the pectoral side of the arm. An important outline of its vertebral border may be seen, in persons in whom the muscles of the back are much developed, through the body section of the Trapezius muscle. The superior angle of the Scapula and its vertebral border are also visible through the Trapezius at points suited to their anatomical relations, and the movements of their parts.

9. Serratus Magnus arises by nine fleshy digitations from the upper border of the eight upper ribs, and is inserted into the whole length of the vertebral border of the Scapula upon the under side of that bone. It is divided into three parts. Its lower third is attached to the inner surface of the inferior angle of the Scapula by an attachment which is partly tendinous and partly muscular. This limb falls below the angle of the Scapula and is covered by the Latissimus Dorsi through which, notwithstanding the thickness of that muscle, its form is distinctly visible.

Muscles, Tendons, and Bones

1. Acromial limb of Trapezius.
2. Wings of Trapezius.
3. Shoulder of Trapezius.
3a. Body of Trapezius.
4. Acromial limb of Deltoid.
5. Scapular limb of Deltoid.
6. Infra Spinatus.
7. Teres Major.
8. Teres Minor.
10. Superficial portion of Rhomboideus.

11, 11d. Latissimus Dorsi. Arises from the spinous processes of the sixth inferior dorsal, from those of the sacral and lumbar vertebrae, from the posterior third of the crest of the ilium, see Skeleton Sections, and from the last four ribs, and is inserted by a strong tendon into the lower part of the inner border of the bicipital groove of the humerus. From its upper border limit it passes outward along the inferior edge of the Rhomboideus, over the inferior angle of the scapula, and the lower third of the Teres major, to disappear, in posterior view, behind the upper third of that muscle. Its contractile fibers rise upon the outer border of the muscles of the loins and sacrum, and, ascending in the manner represented above, cover the flank section of the External Oblique Muscle, and come upon the outline at 11d, 11a. Its tendon of origin is Aponeurotic; and, in passing outward from the spinal column, it covers and forms a sheath for, the muscles of the Loins and Sacrum, viz., Sacro Lumbalis, 12.

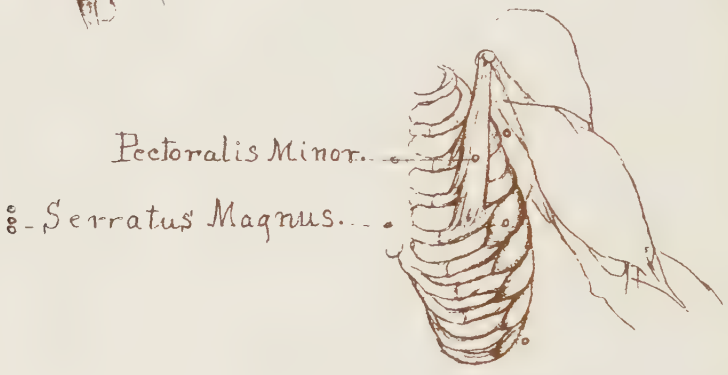
13. Flank Section of the External Oblique Muscle.
14. Pelvic Tendon of Latissimus Dorsi.
15. Space separating the External Oblique from the crest of the Ilium.
16. Crest of the Ilium.
The Ribs.

Integumentary Form

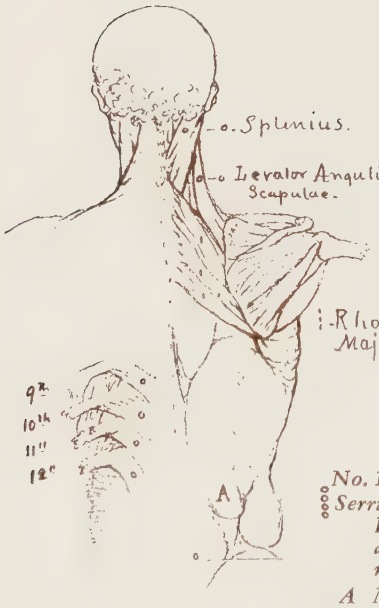
Muscular Form

No. 177

No. 178
Muscles of the Axilla



No. 182

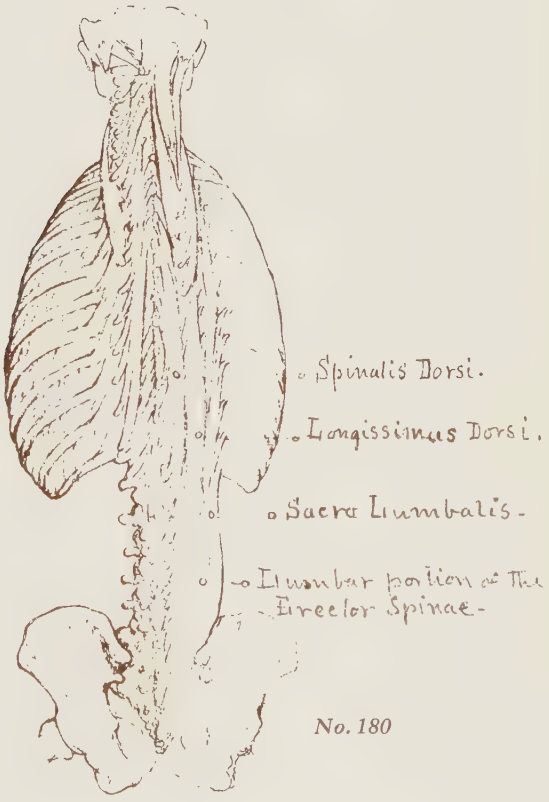


No. 181
Serratus Posticus Inferior.
Is covered by the Latissimus Dorsi and, in certain positions of the body, may be seen upon the surface.
A Muscles of the Erector System seen under the Latissimus Dorsi.
o Sacro Lumbalis. That part of the Erector System not covered by the muscles of the back.

Latissimus Dorsi — Side view
Serratus Magnus Cutaneous Section.

The exposed portion of the serratus consists of three tongues — upper, lower, and middle. Sometimes the end of a fourth may be discovered projecting a little beyond the edge of the Latissimus Dorsi. Great care should be taken to give these tongues a softened outline. On the side of the body the Latissimus Dorsi ascends in a straight line from the eighth rib to the Humerus. When large, it nearly fills the upper part of the Axilla. When the Latissimus Dorsi is large, the muscles of the Scapula are large. It gives width to the side and thickness of the back. It is the principal muscle of the upper arm.

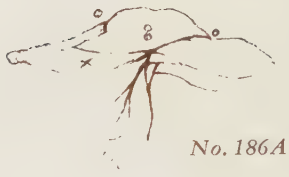
No. 179



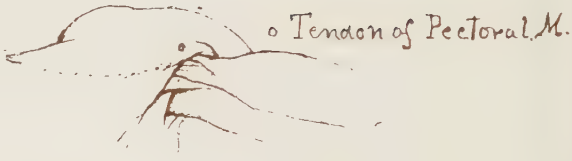
The Erector Spinae, and its prolongations in the dorsal and cervical regions, fill up the vertebral groove on each side of the Spine. This large muscular and tendinous mass varies in size and structure at different parts of the Spine. In the Sacral region, the Erector Spinae is narrow and pointed, and its origin chiefly tendinous in structure (its lower third is covered by the Gluteus Magnus). In the lumbar region, it becomes enlarged, and forms a large fleshy mass. This is the Lumbar Section of art anatomy, and is named Sacro Lumbalis because it occupies the Sacral and Lumbar portions of the back. That portion of the Erector System called the Spinalis Dorsi may be seen through the Latissimus Dorsi on the extended side when the body is flexed. The limbs, Longissimus Dorsi, and Sacro Lumbalis may be seen through the Latissimus Dorsi. See A, No. 181.

No. 180

No. 183
o Clavicular Limb.
" Sternal Limb.
⋮ Costal Limb.
ıı ı Cartilage of ribs below the Sternum.



No. 186A



No. 186B

No. 186

No. 186C

No. 187

The Pectoralis Major is a broad, thick, triangular muscle, situated at the upper and fore part of the Thorax and Axilla. It arises from the anterior border of the Clavicle and the anterior surface of the Sternum, from the cartilages of the second, third, fourth, and, more particularly, those of the fifth and sixth ribs, and is inserted into the anterior margin of the bicipital groove of the humerus. To reach its point of attachment it passes over and beyond the heads of biceps. See o, No. 186B. It passes under the Deltoid, nearly midway between the Acromion and the Deltoid eminence. See o No. 186A. Where the sternal ends of the ribs are prominent, the sternal limb is separated into bands, as represented in No. 186 and 186C. The Pectoralis is a flexor when all the limbs act together. When the clavicular limb, only, is in action, the arm is drawn upward toward the face. When the costal limb, only, is in action, the humerus is depressed, and the elbow, at the point of extremest tension is resting upon the Navel. That part of the Pectoral muscle covering Axilla is called the Axillary Section. See No. 183 Cutaneous Side, No. 184, and No. 187x.

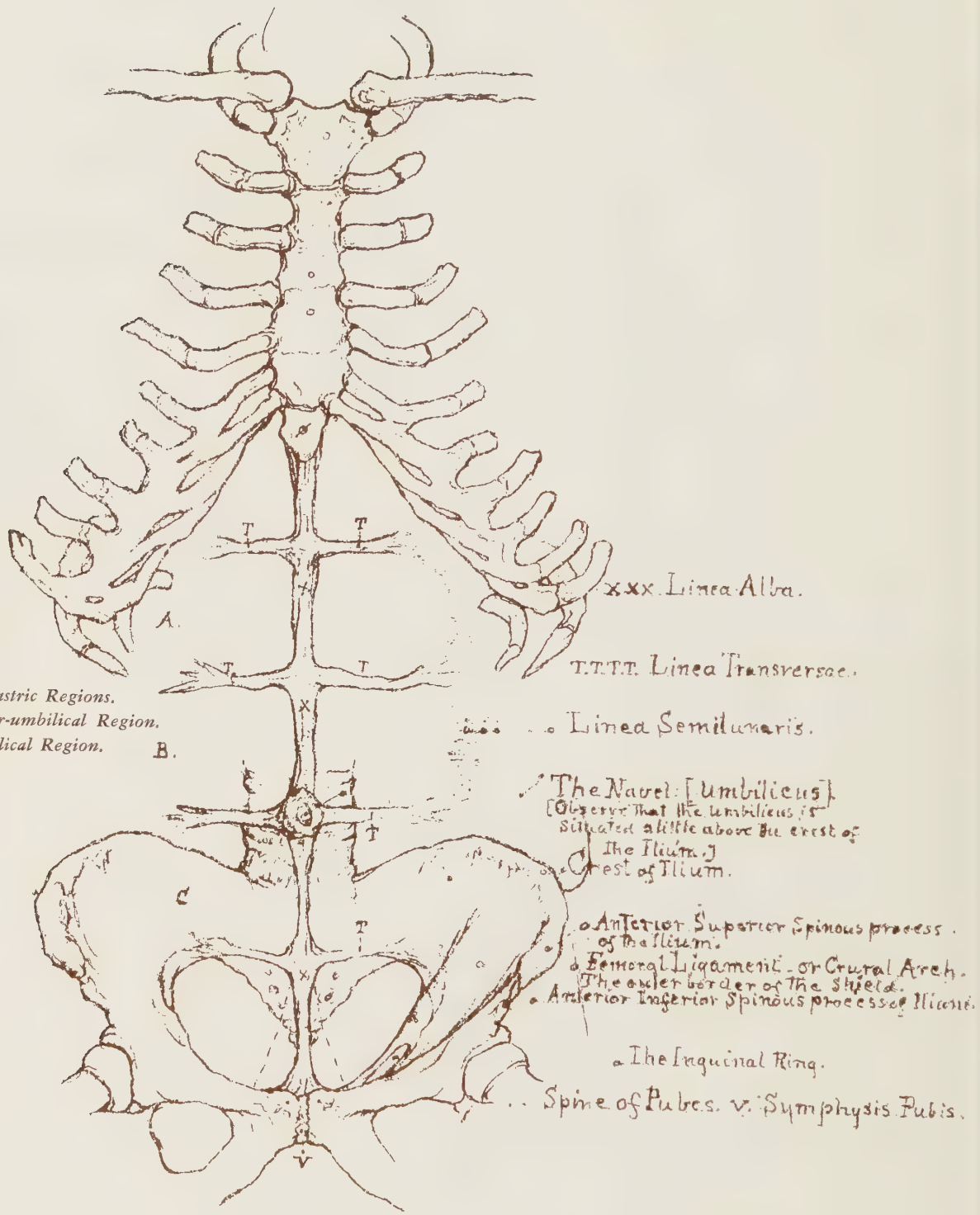
No.184

No. 185

In some men, the muscles are thin and fibrous. In these, the skeleton comes upon the outline. In others, they are large and rope-like, with cavernous depressions between them. In these, the outline is a combination of the muscular and the bony. In others, they are full to such an extent that they rise in circular folds from their points of attachment and from the closure of their spaces come altogether upon the outline, except at points where muscles are not found. When the muscles are full, the integument is full. When the muscles are thin, the integument is thin. (Male proportions.)

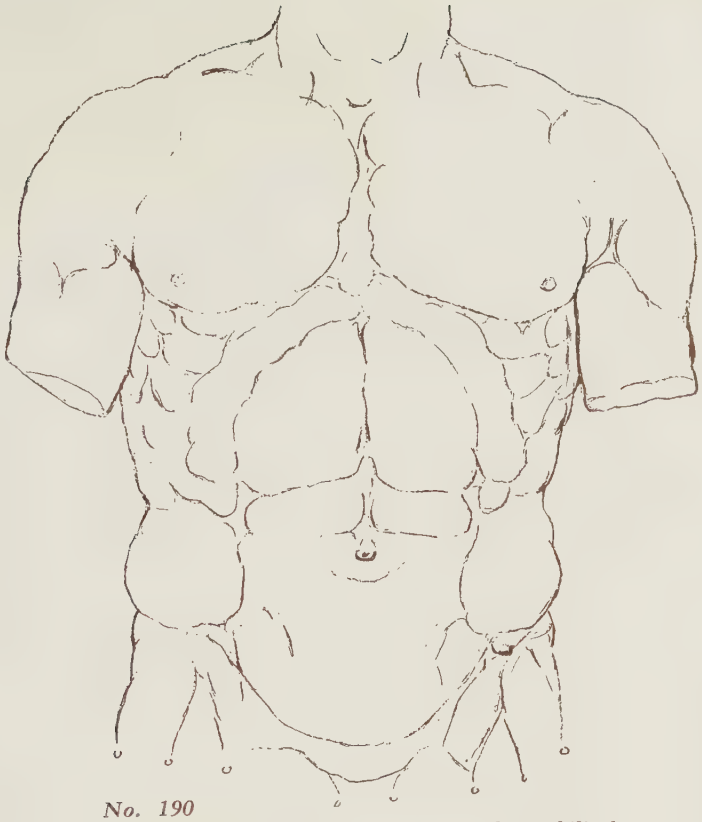
From the peculiar manner of arrangement and distribution of the instruments of muscular force, one could almost imagine that the bones were made first for certain immediate uses of their own, and that the muscles were attached afterward by ingenious contrivance, as room might offer or convenience suggest. This in a common and purely mechanical way, and always in the best way, though by no means in the only way. Braces, being put upon those which from the poor advantage offered for their attachment were likely to slip out of place when in action; braces here, bands there, and fasciae, reinforcing tendons, binding aponeuroses, and synovial membranes, wherever an unerring infallible foresight could perceive necessity for their use. From what is here spoken of, it will be seen that but few muscles can be rectilinear in form, and therefore direct in action; that most of them must, to a certain extent, twist upon themselves from the direction of their fibers in their relation to the direction of their tendons, from their place upon the bones, their relation to one another at the time of action, and from the position of the bones as they are in the act of performing their own duty to which somehow their uses must conform.

No. 188



A. Epigastric Regions.
B. Super-umbilical Region.
C. Umbilical Region.

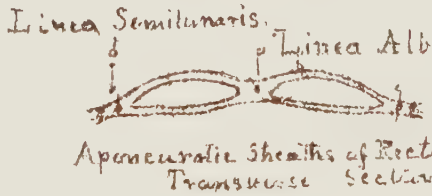
No. 189
The Field of the Abdomen and its Departments
Anatomical details formulated



No. 190
The Epigastric, Super-umbilical, and Umbilical sections form the "Abdominal Shield."

The Epigastric section extends from the ribs and ensiform cartilage to a point of flexure below, determined by the size and form of the epigastric field. The Umbilical Section extends from the superior border of the Umbilicus to the Pubis. Its size is determined by the size of the pelvic opening. The Super-umbilical Section represents the Lumbar opening and its uses. As flexion and extension, lateral and direct, are accomplished mainly in the Lumbar region, the Super-umbilical Section, which corresponds to it, must be subject to greater modifications of its original form than either of the other sections.

The parietes of the abdomen are partly aponeurotic and partly muscular: the muscular portions are situated at the sides of the abdomen, beyond the semilunar lines; the aponeurotic portions occupy the central regions of the abdomen and constitute the proper sheaths of the Recti muscles. See No. 191 and No. 189A. The Linea Alba is composed of the joined fibers of the sheaths of the Recti muscles and may be regarded as a tendinous raphe, extending from the Ensiform Cartilage to the Symphysis Pubis. It constitutes the median line of the abdomen. The transverse fibrous bands called the Lineae Transversae are similar in structure to the Linea Alba, and might, with propriety, be called the reinforcing tendons of the Recti muscles. They are from three to five in number. The semilunar line ooo gives attachment to the Obliquus Externus muscle. All these lines may be distinctly seen upon the surface when the muscles are in action. But though they conform in a measure to the borders of the three great regions of the abdomen, they do not determine their limits.

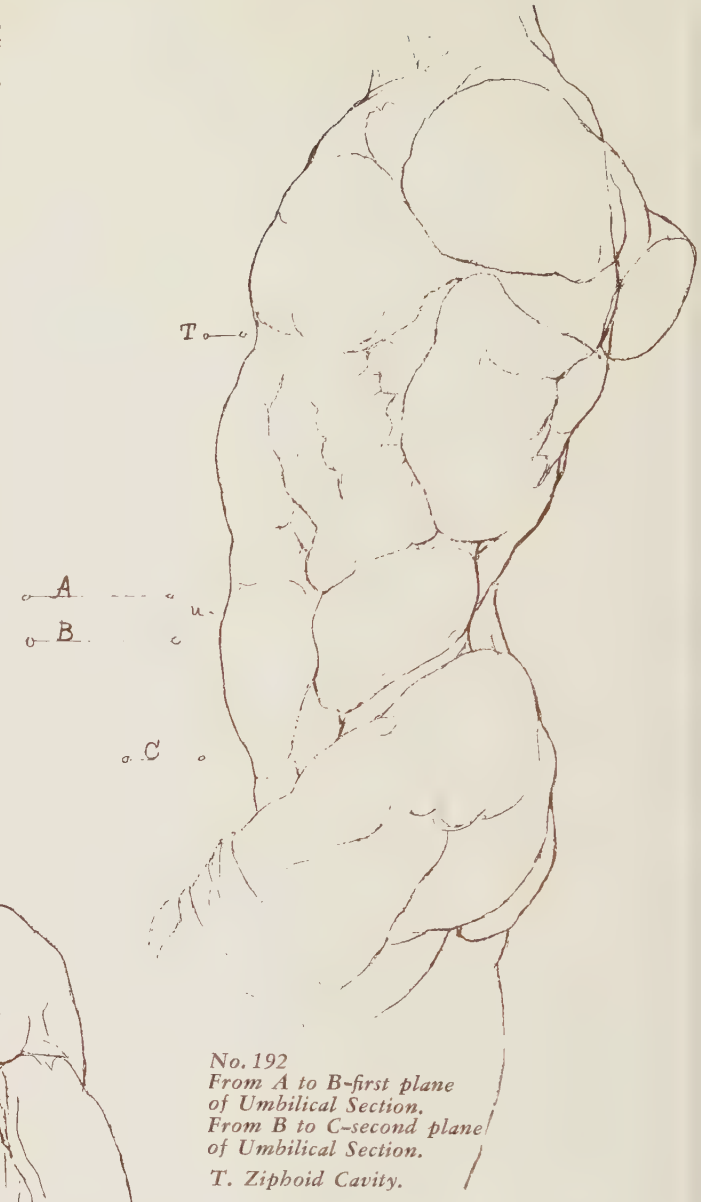


No. 189A
Aponeurotic sheaths of Recti muscles — Transverse section

The Rectus Abdominis is a long, flat muscle which extends from the crest of the Os Pubis to cartilages of the fifth and sixth ribs. It is separated from the muscle of the opposite side by the Linea Alba, and is enclosed in a sheath formed by the aponeuroses of the Oblique and Transversalis muscles. In art anatomy, the Recti muscles constitute a single body, the use of which is to cover the abdominal opening and conform to the movements of the viscera lying behind its wall. The Recti muscles are without expression.

The External Oblique Muscle — B, No. 191 — arises from the external surfaces and lower borders of the seven or eight inferior ribs, and is inserted into the anterior half of the external lip of the crest of the Ilium and into the external edge of the anterior aponeurosis. The upper or costal attachments consist of seven or eight angular tongues, or digitations, fleshy and tendinous in their structure, and arranged in an oblique line, running downward and backward. The Flank section, in art anatomy called the section of the Internal Oblique, viz., that portion of the muscles of the side situated between the lower border of the cone of the chest and crest of the ilium, is composed of the external oblique, internal oblique, and transversalis, and is the principal artistic section of the body.

No. 191
Rectus Abdominis
Obliquus Externus

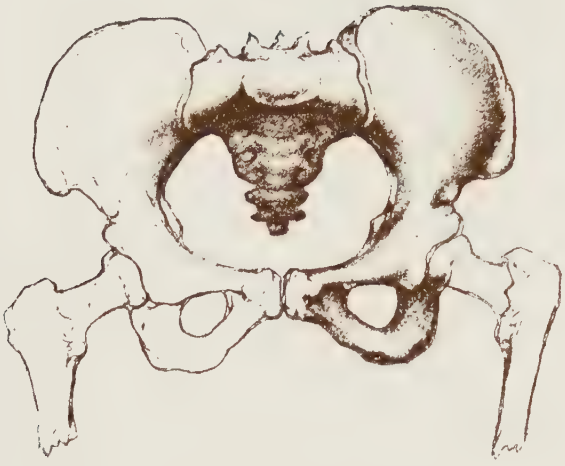


No. 192
From A to B-first plane of Umbilical Section.
From B to C-second plane of Umbilical Section.
T. Ziphoid Cavity.
u. Umbilicus.

The Femoral Ligament or Crural Arch is that portion of the aponeurosis which extends between the anterior superior process of the Ilium and the spine of the Os Pubis. It defines the limit of the abdomen at its inferior border. Seen through the integument, the femoral ligaments constitute the lower border of the abdominal shield.

The greatest attention should be given to the form and uses of the flank muscles. In the higher states of physical health and muscular power, they press beyond and overhang the crest of the ilium. They yield to every movement of the body. In the feeble, they are often concave.

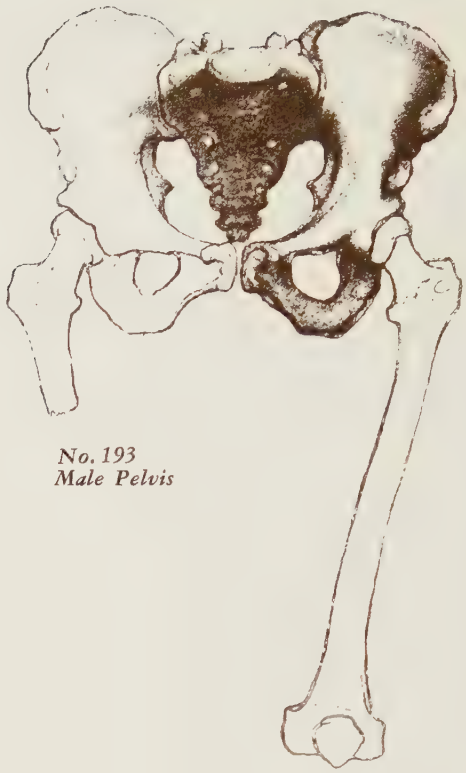
Page 26



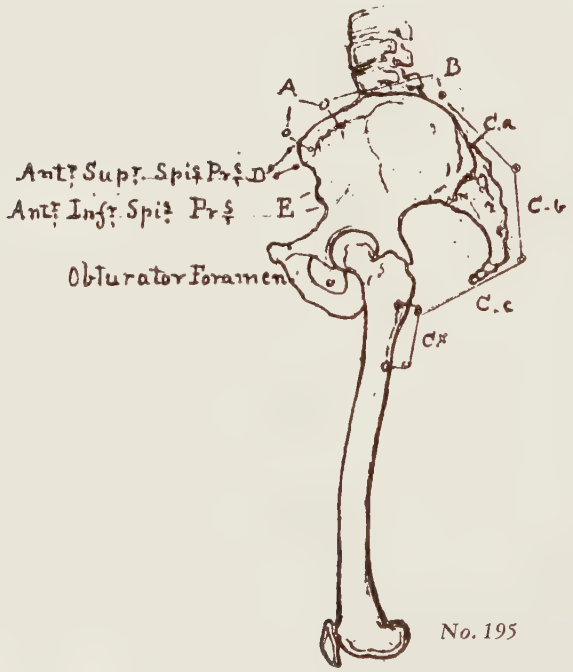
No. 194
Female Pelvis

The female pelvis exceeds the male in its horizontal diameters; the male pelvis exceeds the female in its vertical diameters.

Compared with the male pelvis, the female pelvis is drawn too large.

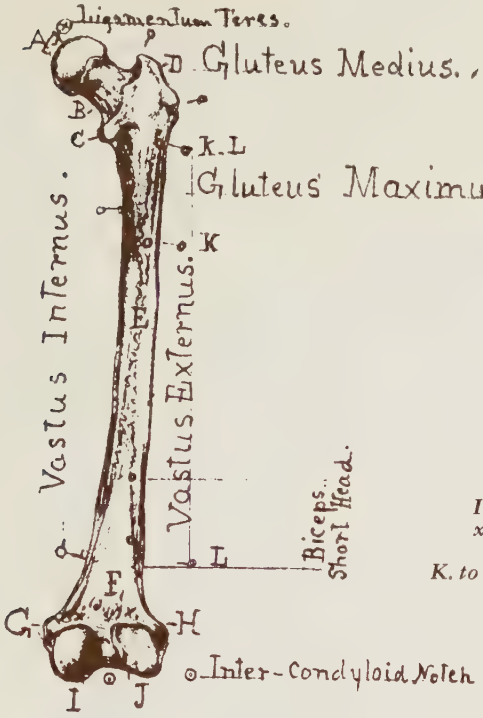


No. 193
Male Pelvis



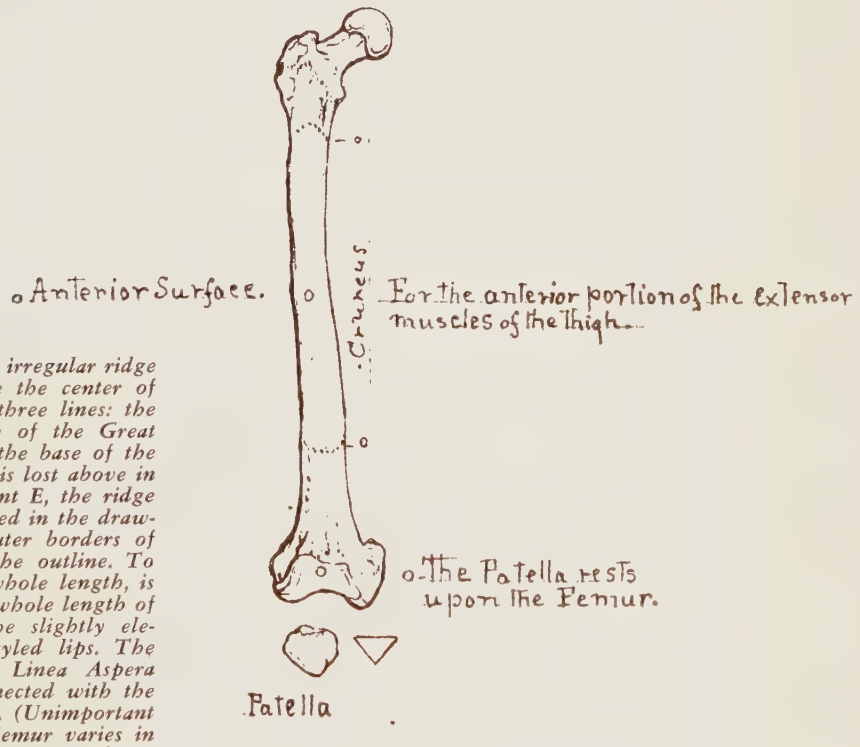
No. 195

A. Point of origin of the Tensor Vaginae Femoris.
From A to B for visible portion of Gluteus Medius.
From B to Ca upon the posterior third of crest of Ilium.
From Ca to Cc upon the Sacrum.
From top to bottom of Line Cx for Gluteus Maximus.
D. Sartorius.
E. Point of origin of Rectus Femoris.



The Right Femur — Posterior Surface
See Knee and Pelvis Joints
A. Head of Femur.
B. Neck.
C. Lesser Trochanter.
D. Great Trochanter.
E. Shaft.
F. Popliteal Space.
G. Inner Condyle or Tuberosity.
H. Outer Condyle or Tuberosity.
I, J. Inner and Outer Articular Eminences.
x.x. Points of origin of Inner and Outer Heads of Gastrocnemius Muscle.
K. to K. Point of insertion of Tendon of Gluteus Maximus Muscle.

No. 196

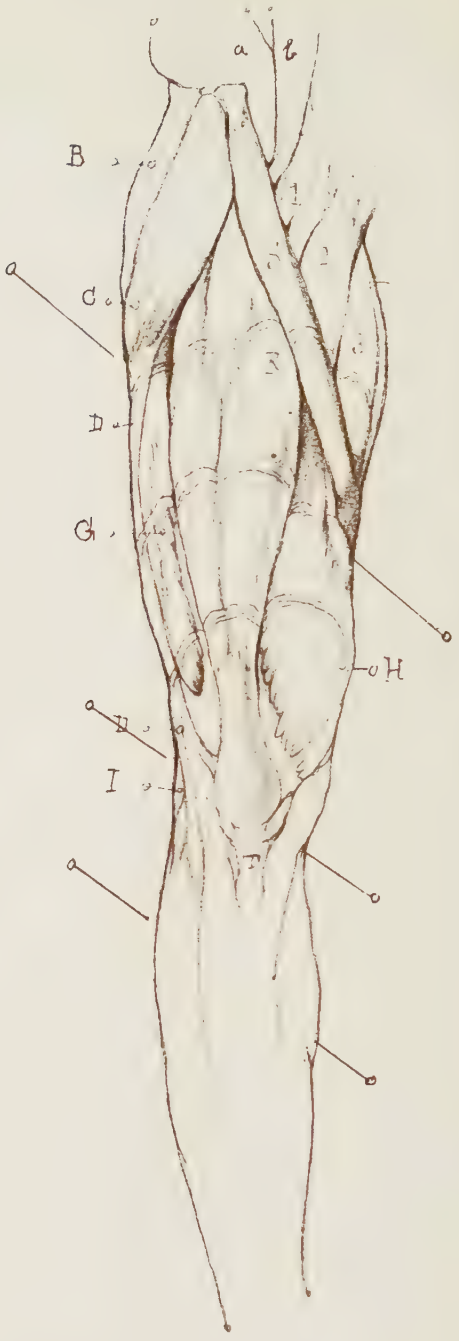

Anterior Surface.
Crureus
For the anterior portion of the extensor muscles of the thigh.
The Patella rests upon the Femur.
Patella

No. 197

The center of the Femur is marked by an irregular ridge called the Linea Aspera. A little above the center of the shaft (at E) this crest divides into three lines: the most external one ascends to the base of the Great Trochanter; the middle one ascends to the base of the Trochanter Minor; and the internal one is lost above in spiral line of the femur. Below the point E, the ridge divides to the right and left, as represented in the drawing, descending upon the inner and outer borders of the popliteal field to disappear upon the outline. To the inner lip of the Linea Aspera, its whole length, is attached the Vastus Internus; and to the whole length of the outer lip, the Vastus Externus. The slightly elevated edges of this rough field are styled lips. The Adductor Magnus is attached to the Linea Aspera throughout its entire length, being connected with the outer lip above and its inner lip below. (Unimportant particulars omitted.) The neck of the Femur varies in length in different persons: in males it forms an obtuse angle with the body of the Femur; generally in females, an acute angle, being one of the causes of the prominence in them of the Great Trochanter. The bone inclines toward the median line sufficiently to bring the Inner Condyle nearly under the innermost edge of the Obturator Foramen.

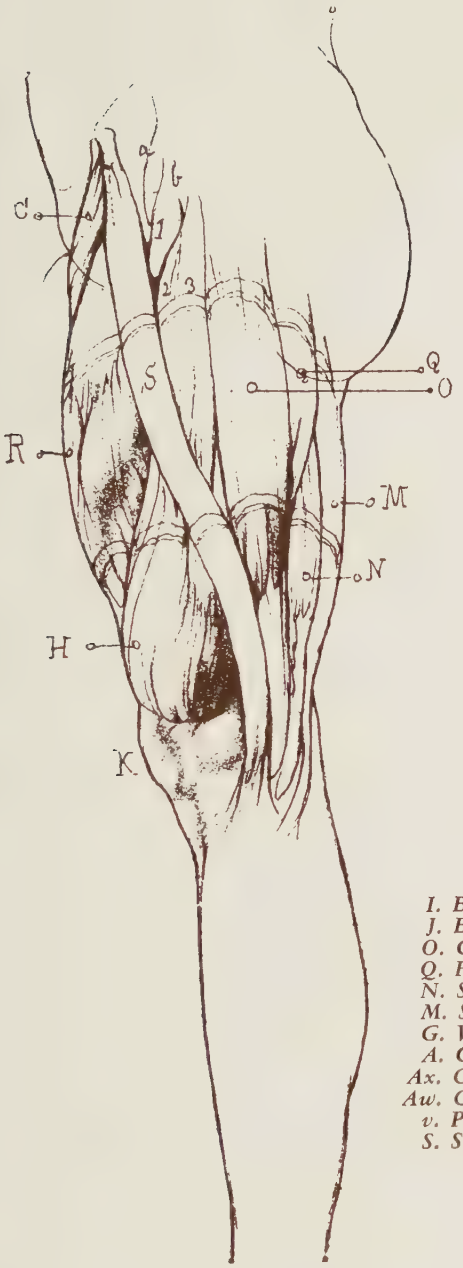
No. 198
Outside view

A. Gluteus Maximus.
B. Gluteus Medius — covering Gluteus Minimus.
C. Tensor Vaginae Femoris. The muscle of the Fascia Lata.
DD. Band of the Fascia Lata.
E. Sartorius.
F. Rectus Femoris.
G. Vastus Internus.
H. Vastus Internus.
I. Biceps.
J. Biceps Tendon.
K. Patella.
L. Ligament of the patella.
O. The muscles of the thigh are covered throughout by the Fascial Lata. The only portions of the femoral aponeuroses shown in this drawing are the band marked D and the pelvic limb giving attachment to the Gluteus Maximus, marked o.

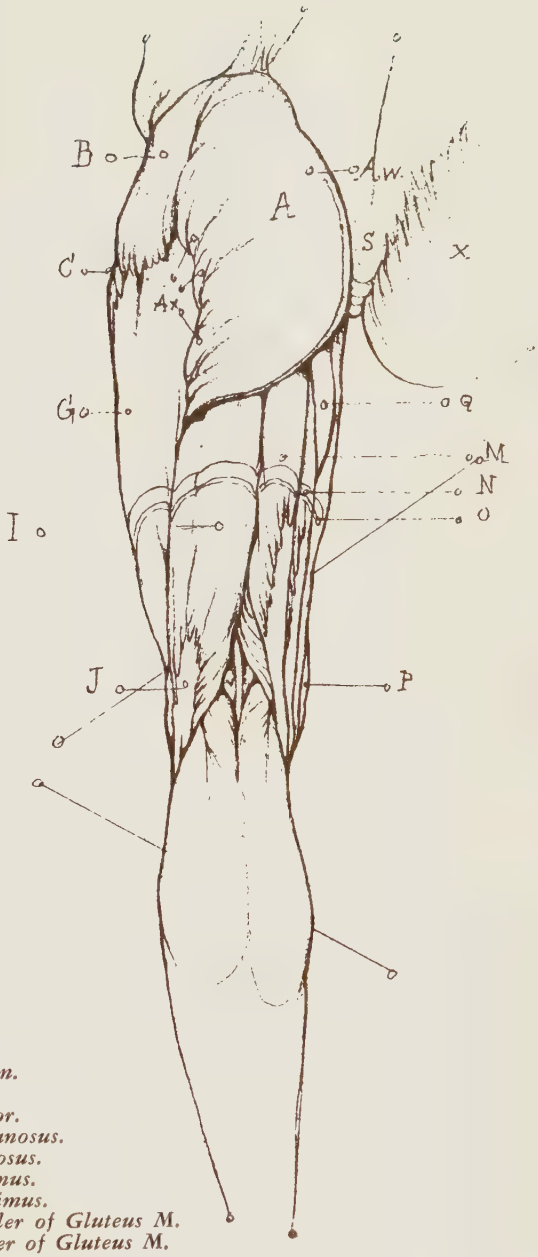


No. 199
Front view

1, 2, 3. The Adductor Muscles.
a. Iliacus.
b. Psoas.
B. Gluteus Medius.
C. Tensor Vaginae Femoris.
Fascia Lata
S. Sartorius.
R. Rectus Femoris.
G. Vastus Externus.
H. Vastus Internus.
I. Tendon of Biceps.
DD. Band.

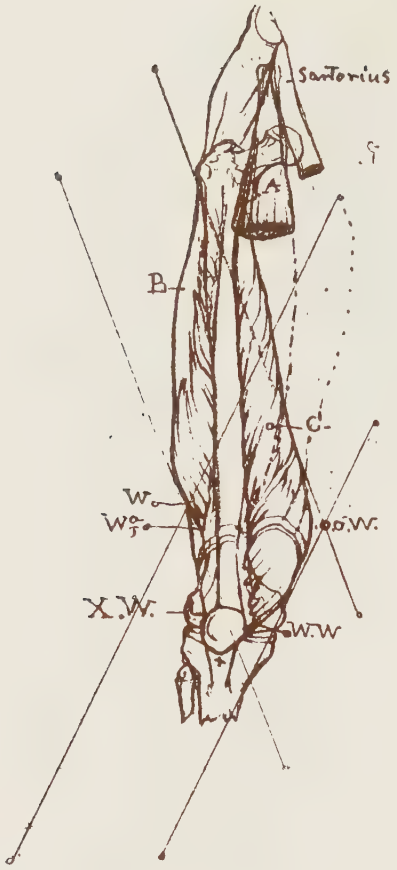


No. 200
Inside view



No. 201
Back view

I. Biceps
J. Biceps Tendon.
O. Gracilis.
Q. First Adductor.
N. Semi-Membranosus.
M. Semi-Tendinosus.
G. Vastus Externus.
A. Gluteus Maximus.
Ax. Concave border of Gluteus M.
Aw. Convex border of Gluteus M.
v. Popliteal space.
S. Sartorius.



No. 202

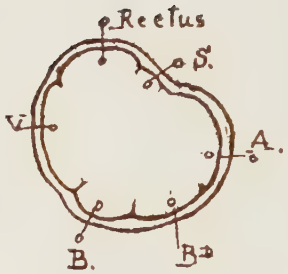
Plan showing the torsion of the front of the thigh.

A. Upper portion of Rectus. The Rectus Femoris arises by its external or straight tendon, A, from the anterior inferior spinous process of Ilium, and is attached to the Patella by a tendon common to the several limbs of the Triceps Femoris.

B. Vastus Externus. Arises at the base of the great Trochanter, and terminates upon the outline at W and upon its portion of the common tendon at Wa within the outline.

C. Vastus Internus. Arises from the inner side of the neck of the femur, and, passing downward and inward, at highest stage of development, terminates upon the outline at the point marked o.o.W. Whence, turning outward, it crosses the inner outline of the Femur at the upper border of the Inner Condyle, and terminates upon the common tendon at W.W. The line of torsion terminates at the inferior angle of the Patella, X. The bones of the Knee must be carefully defined in the male figure. The surface of the outside of the leg from B to W inclines backward toward the median line.

When the body is in energetic motion, fineness must be produced by preserving the lengths, and giving to the muscles an expression of strength. The joints appear smaller and finer when the body is in motion than when it is at rest. When the body is at rest, the accent of muscles in motion should be carefully avoided.



No. 203

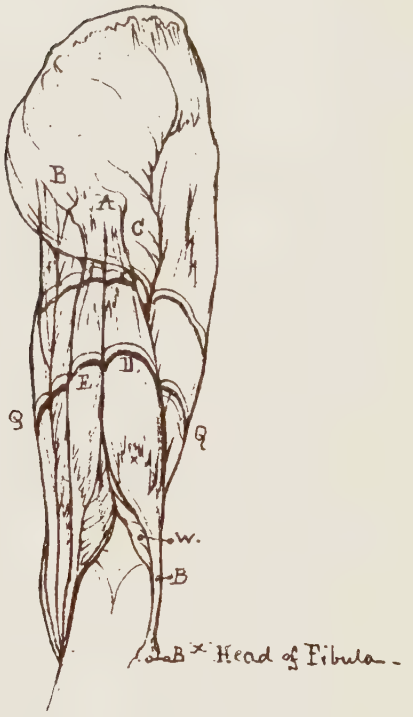
Transverse section — outline

R. Flexors.
S. Sartorius.
V. Vastus externus.
A. Adductors.
B, Bb. Flexors.
X. Ligament of patella, see No. 202.

No. 204
Adductor System

A. Adductor Magnus. Tendon of AM.
B. Adductor Brevis.
C. Adductor Longus.

These muscles compose the fleshy and yielding mass on the inside of the thigh, marked A in No. 203. See Nos. 199, 200, 201.



No. 205

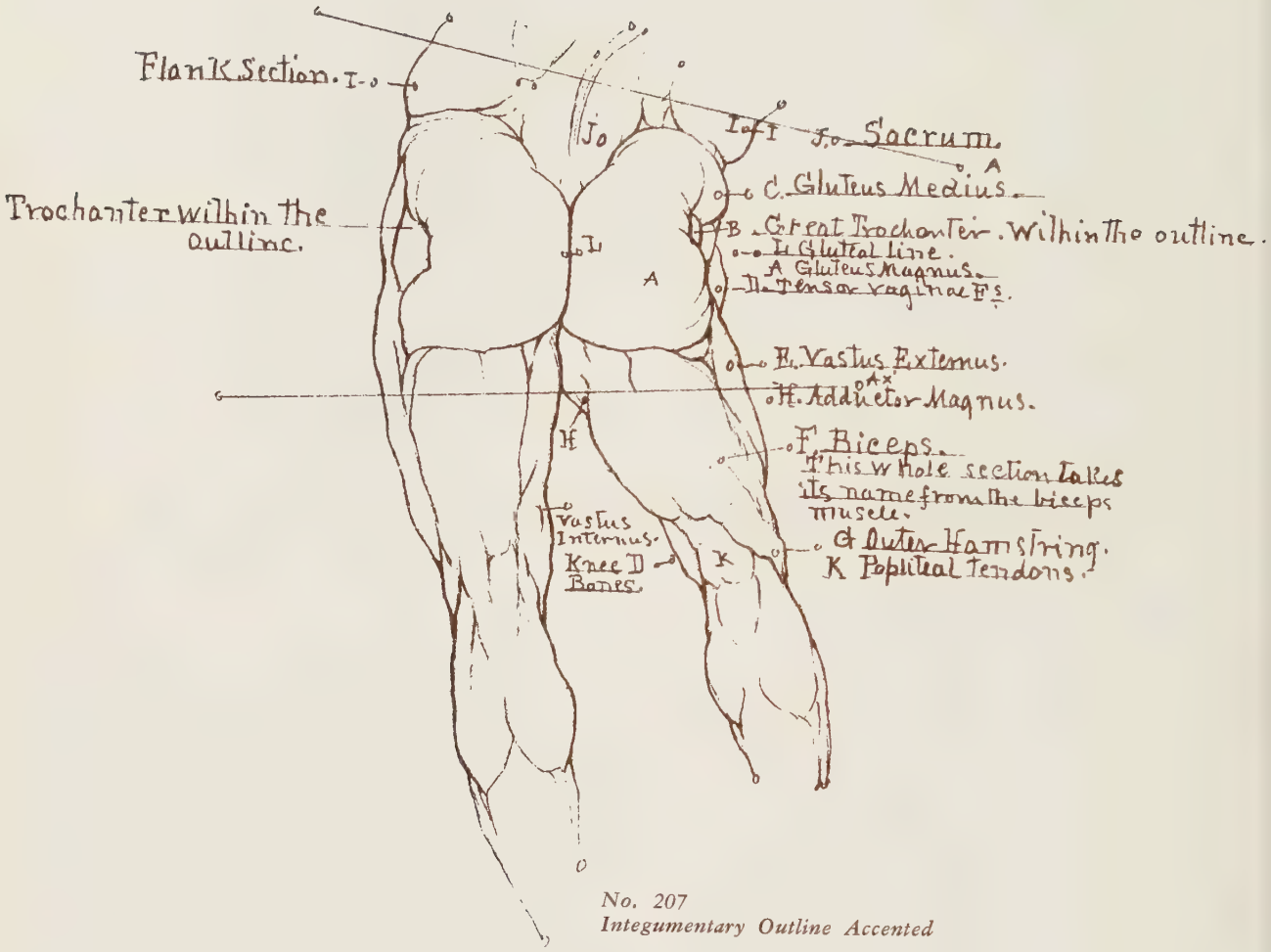
A. Tuberosity of Ischium. To the Ischium are attached, besides many deep-seated muscles, the Biceps, Semi-tendinosus, Semi-membranosus, and the Adductor Magnus.

D. Biceps. The Biceps arises by two heads; that giving form to the superficial limb of the muscle arises from the tuberosity of the Ischium by a tendon common to it and the semi-tendinosus, and becoming tendinous at the point x, descends as here represented (x Biceps tendon) upon the outline to be inserted into the outer side of the head of the Fibula.

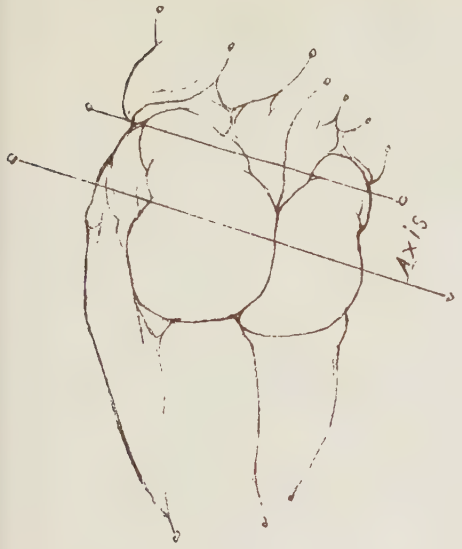
W. Visible portion of the short head of Biceps. The tendon of this muscle forms the outer Hamstring.

E. Semi-tendinosus. Arises from the tuberosity of the Ischium, and is inserted into the upper part of inner surface of the Tibia. The tendons of the Semi-tendinosus and Semi-Membranosus constitute the inner Hamstring. The muscles of the back and inner side of the leg are covered by a thick integument. The line of quantity, QQ, shows the transverse elevation of the parts described. The limbs, in every section, are larger in the center than above or below, and always larger at the end where the muscles have their rise than where they terminate.

No. 206
Formulated detail of the parts forming the knee joint. The patella face is turned toward the outside of the leg.

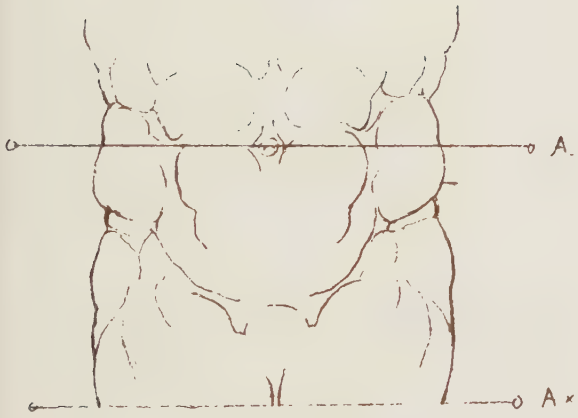


No. 207
Integumentary Outline Accented



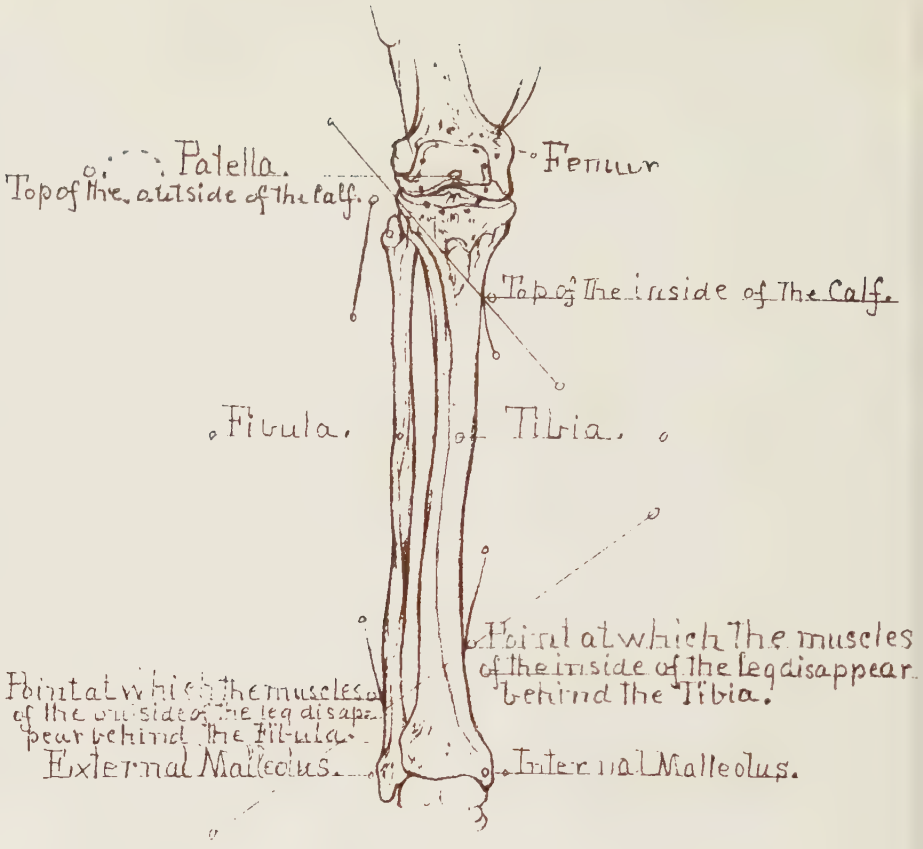
No. 208
In giving movement to the muscles attached to the pelvis, care should be had that its proportions are not obscured.

No. 209
Form of the pelvis at maturity

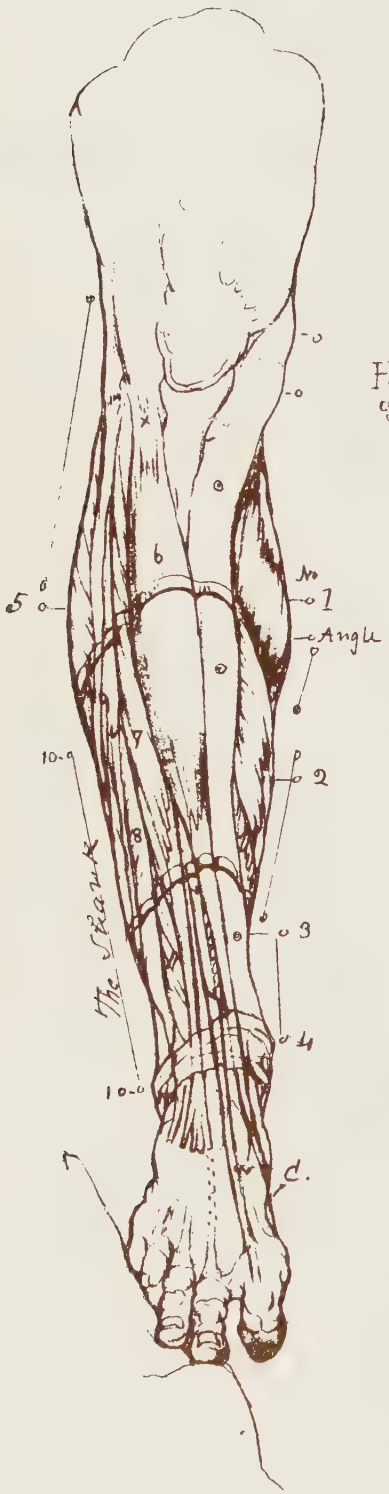


No. 210
The pelvis and parts having pelvic relations

No. 211


Patella.
Top of the outside of the calf.
Femur
Top of the inside of the Calf.
Fibula.
Tibia.
Point at which the muscles of the inside of the leg disappear behind the Tibia.
Point at which the muscles of the outside of the leg disappear behind the Fibula.
External Malleolus.
Internal Malleolus.

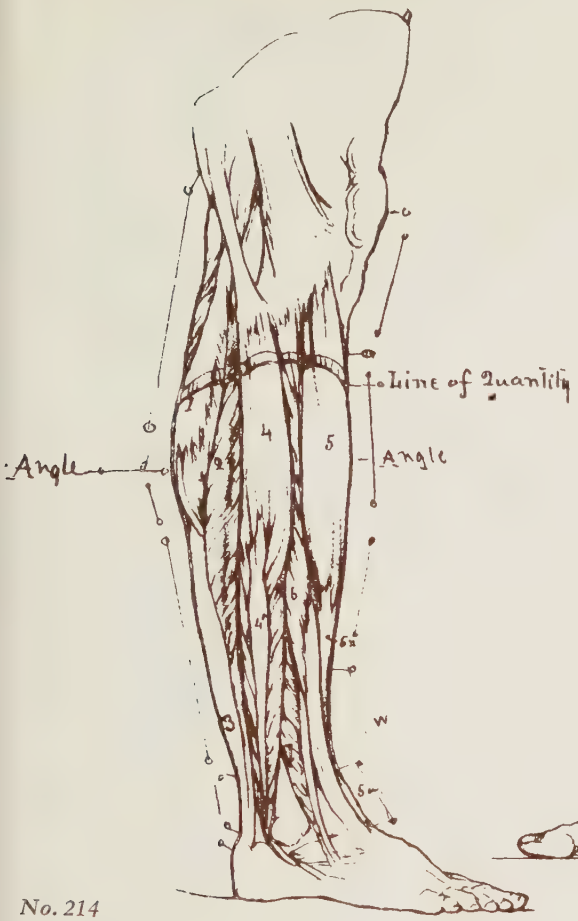
No. 212



No. 213

1. *Inner limb of Gastrocnemius. Arises from the inner Condyle of the Femur.*
5. *Outer limb of Gastrocnemius arises from the outer Condyle of the Femur.*
2. *G. Soleus. Arises from the Fibula and Tibia, and is inserted into the Os Caleis.*
3o. *The Tibia.*
3o-4o. *That portion of the Tibia coming upon the outline.*
6. *Tibialis Anticus. Arises externally from the crest which bounds the anterior tuberosity of the Tibia x; on its inner outline follows the angle or sharp central edge of the shaft of the Tibia, and is inserted into the first or internal cuneiform bone C. See Nos. 75, 89.*
7. *Extensor Longus Digitorum Pedis. Arises from the external tuberosity of the Tibia, on the outer side of the Tibialis Anticus, and is inserted into second and third phalanges of the last four toes.*
V. *Extensor Proprius Pollicus. Arises from the internal surface of the Fibula and comes upon the outline, as here represented, and is inserted into the posterior extremity of the second phalanx.*
8. *Peroneus.*
11. *Peroneus Tertius.*

Notice: The Tibialis Anticus turns the sole of the foot upward and toward the opposite leg. In this figure the gastrocnemius is in action, the heel being drawn upward toward the point of origin. When the Peroneus is in action, the region between the Tibialis Anticus and the muscles of the back of the leg is flattened.

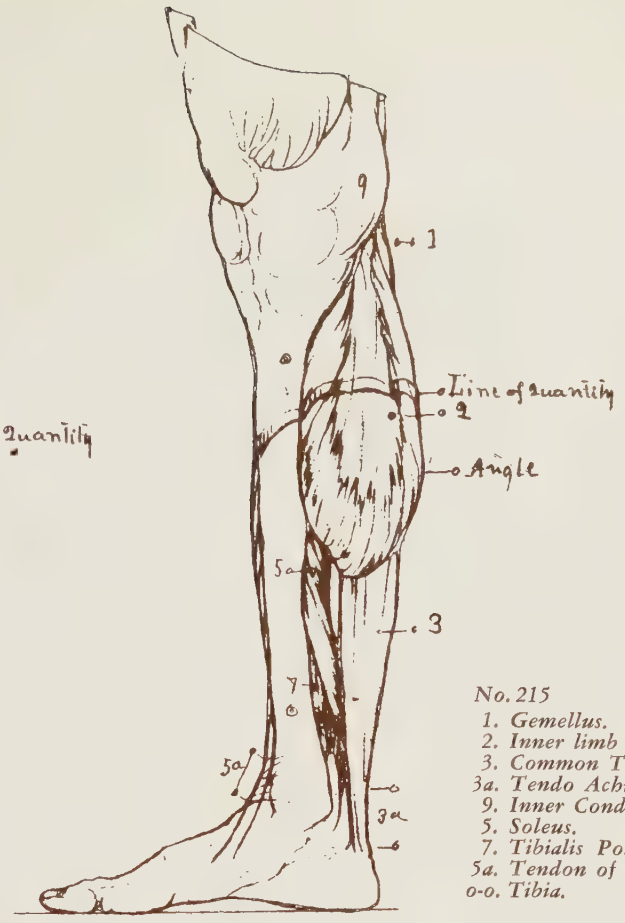


No. 214

1. *Gastrocnemius*
2. *Soleus.*
3. *Tendon.*
4. *Peroneus Longus. Arises externally from the outer and anterior part of the head of the Fibula and, passing in the manner here represented behind the outer ankle, is inserted into the head of the first metatarsal bone.*
5. *Tibialis Anticus.*

5a. *Tendon of Tibialis Anticus connecting the outline of the leg with the outline of the foot.*

6. *Extensor Longus Digitorum Pedis.*
7. *Peroneus Tertius. The planes and point of elevation of the several localities should be studied carefully.*



No. 215

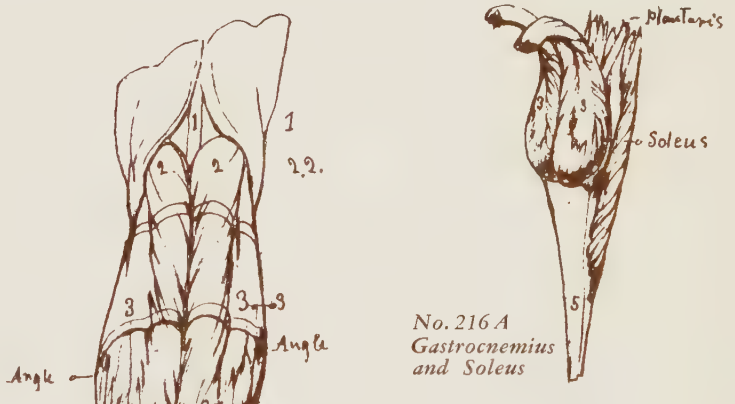
1. *Gemellus.*
2. *Inner limb of Gastrocnemius.*
3. *Common Tendon.*

3a. *Tendo Achillis.*

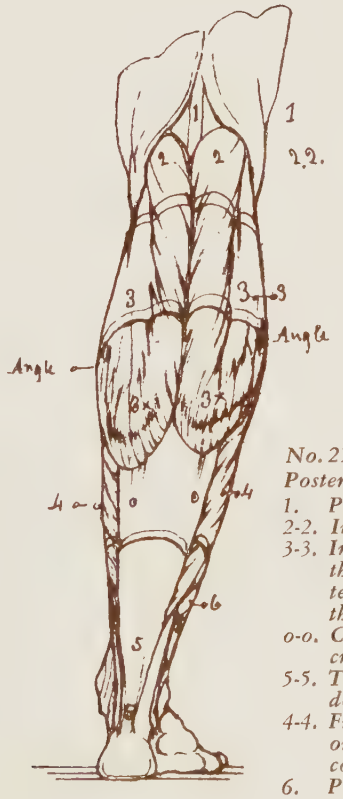
9. *Inner Condyle.*
5. *Soleus.*
7. *Tibialis Posticus.*

5a. *Tendon of Tibialis Anticus.*

o-o. *Tibia.*



No. 216 A
Gastrocnemius and Soleus



No. 216
Posterior view

1. *Popliteal space.*

2-2. *Inner and outer Gemellus.*

3-3. *Inner and outer central tendon. When the Gastrocnemius is in action, these tendons flatten the sides of the calf of the leg.*

o-o. *Common tendon. Tendon of Gastrocnemius and Soleus muscles.*

5-5. *The free portion of the common tendon, Tendo Achillis.*

4-4. *Fibers of the Soleus muscle extending on the sides of the leg beyond the common tendon.*

6. *Peroneus.*

No. 217
Coarse and muscular

No. 218
Integumentary youthful

No. 219
Shank circular

No. 220
Shank long

No. 221

No. 222

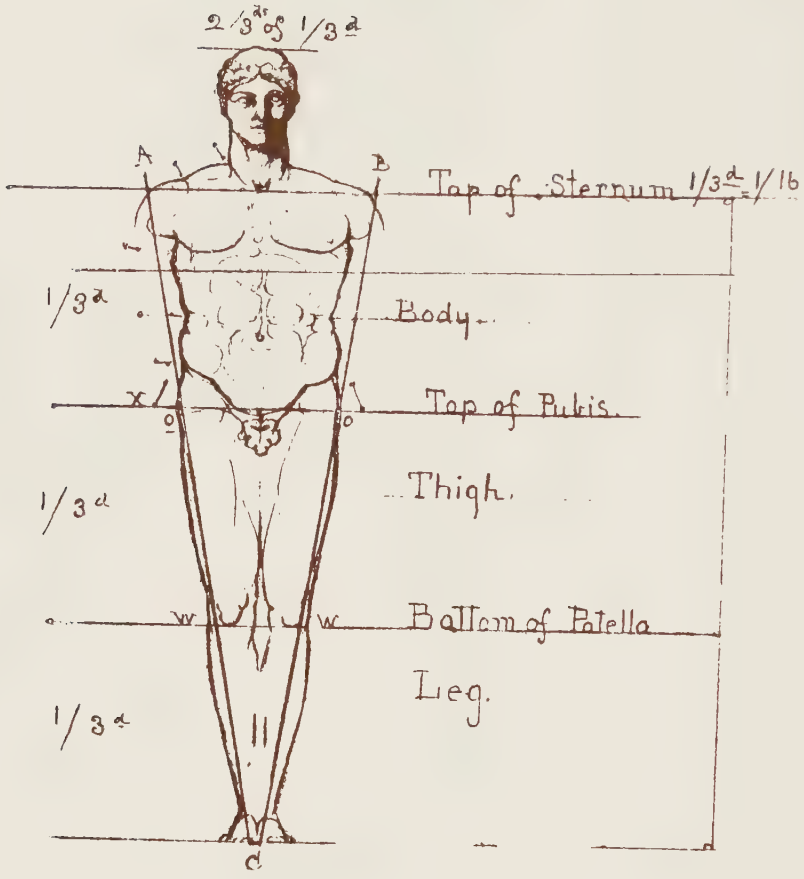
No. 223

No. 224
Shank circular

No. 225
Principal divisions

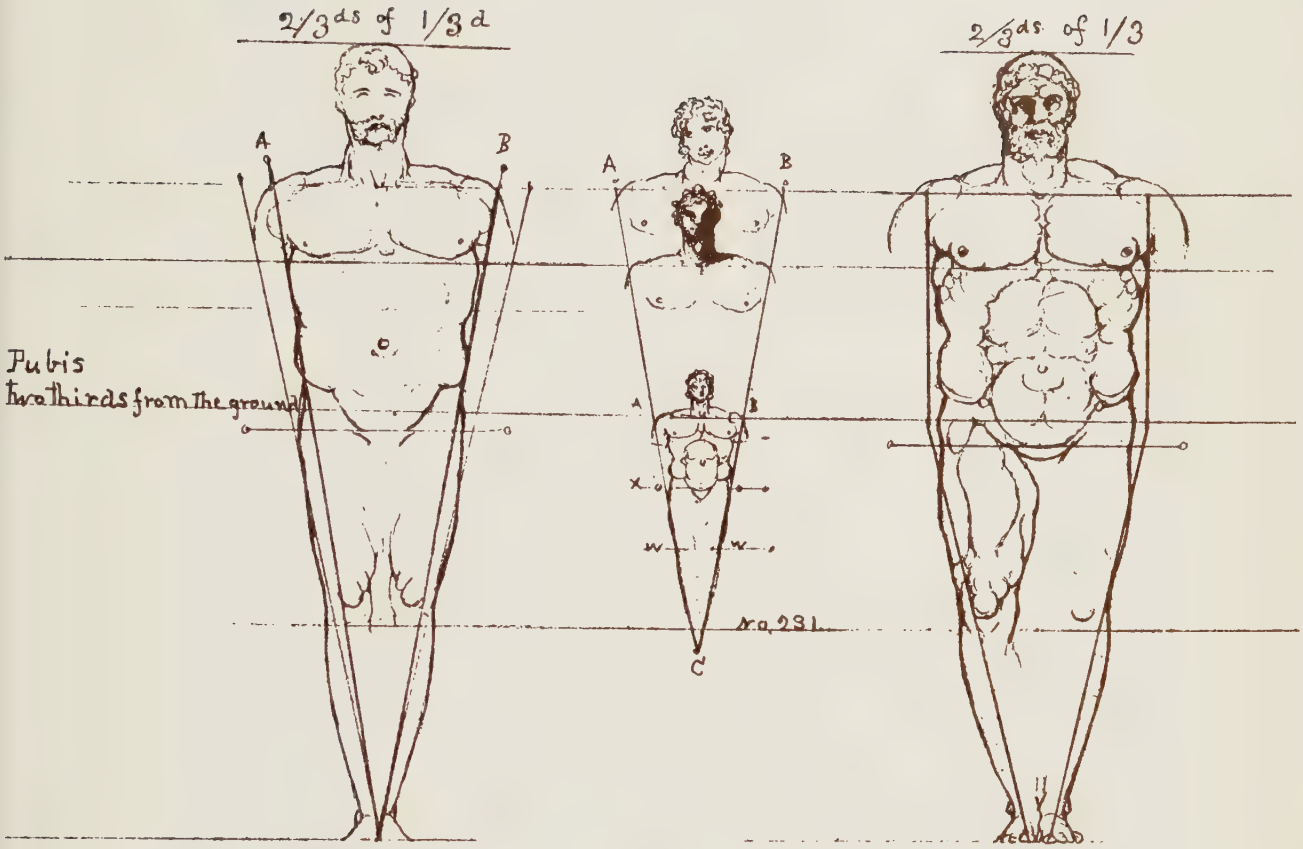
No. 226
Muscular detail in full

No. 227
Local sections



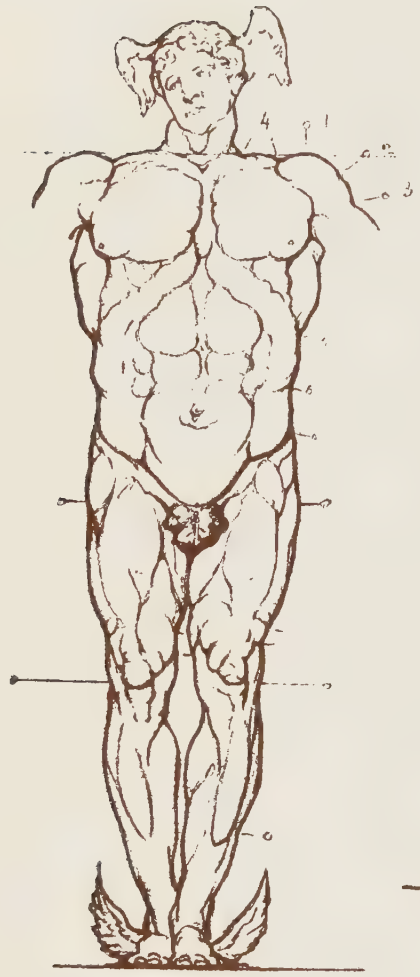
No. 228
Nonpersonal
The ultimate

When the Body, Thigh, and Leg are of equal length, the individualization of the local sections is complete. The chest may occupy the entire space of its division as in No. 229, or only a portion of it as in No. 228. The greatest possible length of the leg and thigh sections consistent with the greatest possible width of the shoulder section locates the pubis at x and the trochanters at oo on the lines AB. Masculine proportions can be represented only in their primitive relations by diverging lines. Every local section should be convex rather than concave, thus placing the bony attachments of the muscular body within the general outline. The station points A, B, oo, and ww are only fixed insofar as they relate to the principles of structure here described. They have no mechanical properties, and may be moved under the guidance of the sensibilities whenever, in changing the details or representing the different stations of natural life, better ones can be discovered.



No. 229
Nonpersonal with personal modifications. Transitional.
See No. 228.

No. 230
Personal. An orderly divergence from the ideal.
See No. 228.

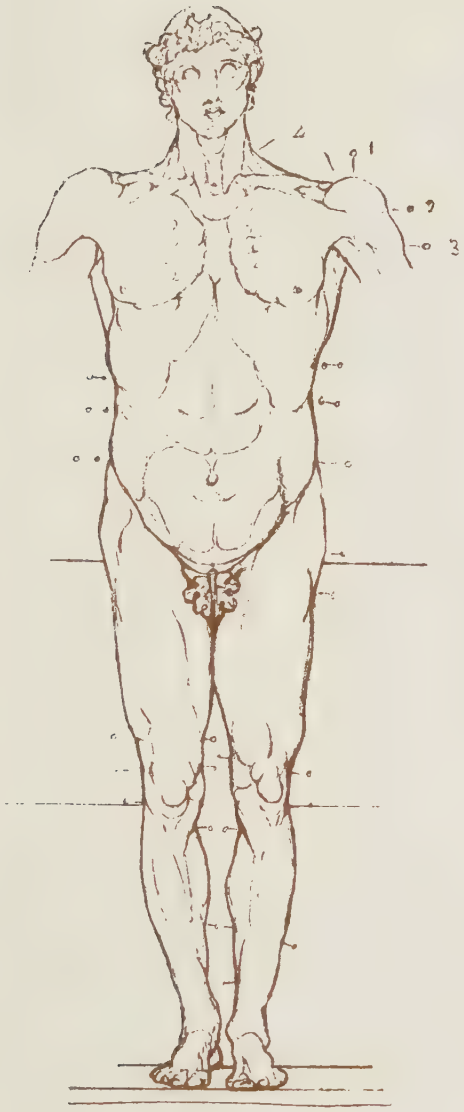


No. 232

Shoulders high. Ribs narrow. Body long. Epigastric section narrow. Muscles large and pendulous. Thighs short and thick. Knees large and coarse. Legs twisted. Cartilage of ribs outstanding. Shoulders heavy. Sides flat. Muscular indentations abrupt and excessive. Large feet and hands. Muscular and local sections distinctly but widely defined. Proportions disorderly throughout. Compare with Nos. 233 and 235.

No. 233

Points of interest, when moved, affect remotest proportions and points of interest more than points of interest in their immediate vicinity. It should be remembered that points of interest and boundaries of local sections should be assumed only in support of the kind of primitive form determined upon.

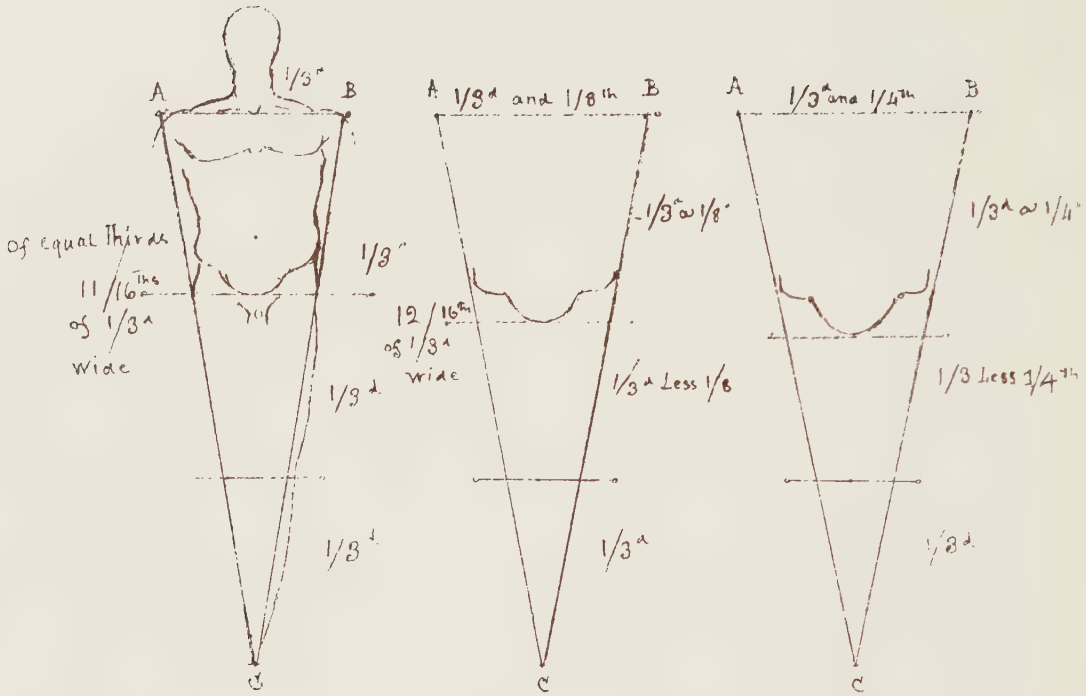


No. 234

Common. Outline concave. Trapezius and Pectoral muscles small. Local sections undefined. Epigastric section narrow. Legs twisted and short. Hips wide. Axillary portion of Pectoral muscle thin and concave. Compare with No. 228 and the points of interest with the points of interest in all the other figures in this division.

No. 235

Short flank. Orderly form. Body thrown back.



No. 236
The Ideal. Apollo, Station 1st.

No. 237
Vulcan, Station 2nd

No. 238
Hercules, Station 3rd

In orderly forms, as the shoulders widen, the body widens throughout. Whatever the station, the local sections must through all their details conform to the outline Ideal. In the majority of men as against the Ideal, the body is long; the sides flat under the arms or thin and hollow at the flanks; the hips wide; the abdomen pendulous below and hollow at the pit of the epigastrium; the thighs short; the knees coarse or thick; the legs flat, twisted, or bent at the shank; the ankle joint low or broad; the heel wide or projecting; the feet flat and broad or thick, and animal-like. In thin men the joints seem large. In fleshy men their forms are obscured by the thickness of the integument. Solid, well-formed shoulders, full chest and epigastric sections, small waists, fine flanks, long thighs, round straight limbs, well-defined joints, and well-formed hands and feet are peculiarities of form to be found associated in but very few persons. Very large men are sometimes well formed but seldom finely formed. The sense of weight in the appearance of the body is rarely equalled by an appearance of strength and activity such as is found in smaller men. Very small men often have heads of the average size and features resembling those of children or of such concentrated masculinity of form and expression as to compensate in the element of character for what is absent in the element of size.

"Art is the language of the sensibilities and in this tongue every different form describes a different character."

No. 236A

The local sections and points of interest by means of which the Ideal must be affirmed in a work of art. An outline figure is one in which the surface represents only the principal of the body, the movements of the body being described without the aid of muscular anatomy. All integumentary figures are figures of this order.

The anatomical elements are the same in all men. Points of interest differ as the stations differ.

The vertical proportions of the Ideal. Station 1st joined to the transverse proportions. Muscular development and points of interest of Station 3rd.
Neither muscular action nor the points of interest are the same in any two persons. A careful study of the anatomical sections should accompany the study of general proportions.

No. 239A

No. 239

A. Broad pectoral
Low trochanters

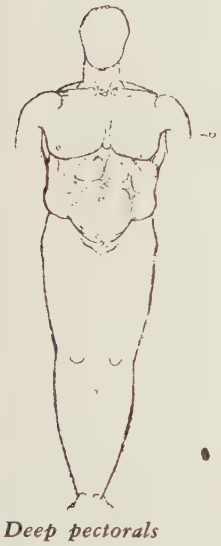
B. High trapezius
High waist

C. Low trapezius
Narrow flank

D. Sloping trapezius

E. Broad and deep pectorals only possible in very large men.

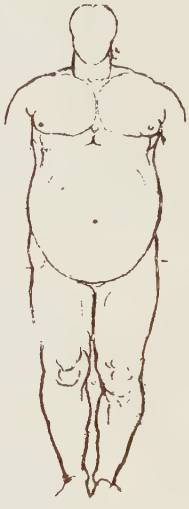
No. 240 Points of interest in the proportions of ordinary men



F. Deep pectorals

G.

H. Skeleton proportions



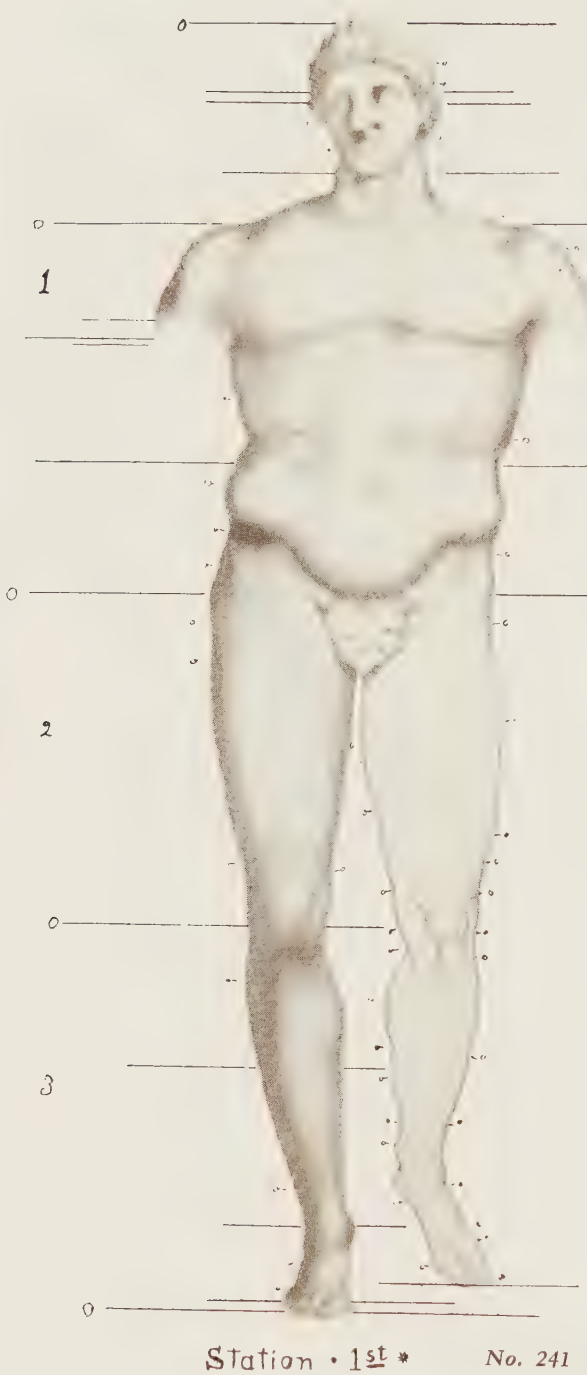
I.

J. Narrow chest
Wide hips

K. Short, broad chest
Narrow pelvis, Low trapezius.

L. Square sides
High shoulders

M. Circular shoulders, body, and flanks.



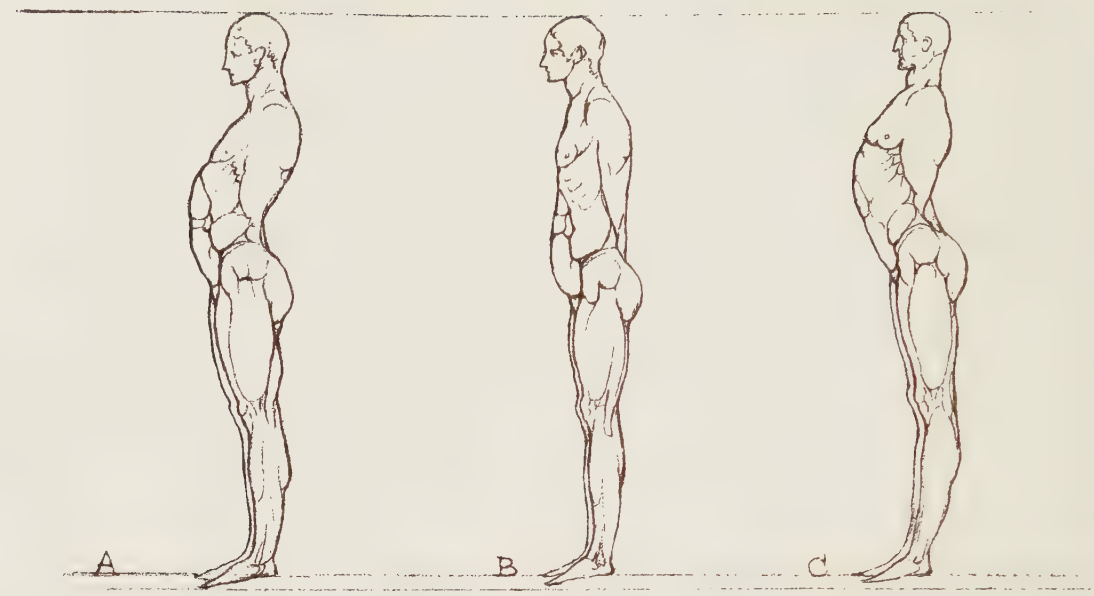
Station • 1st • No. 241

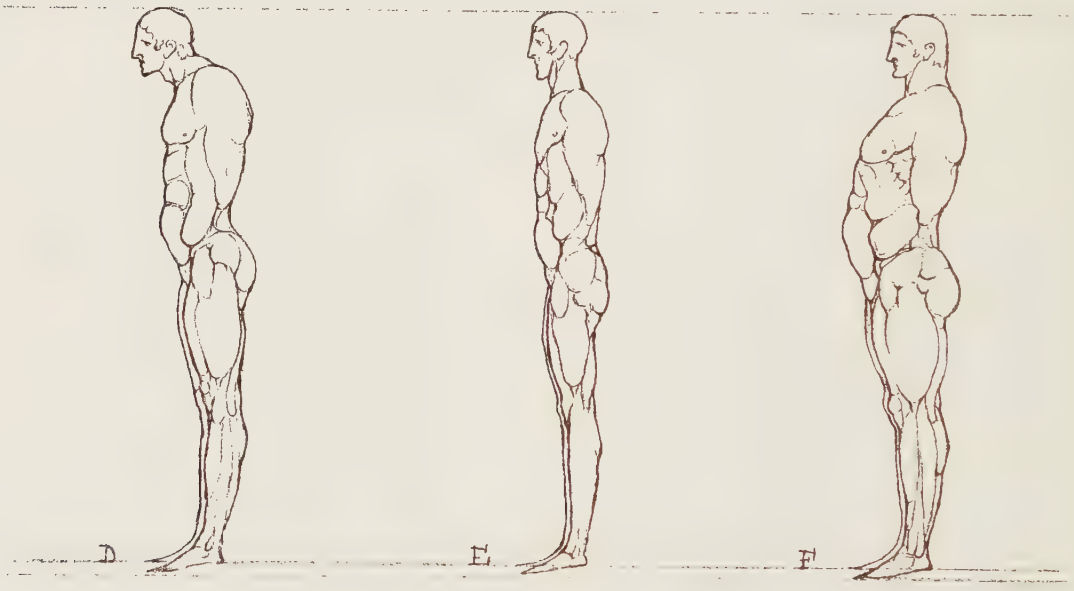
The vertical elements are elements of proportion fixed by natural law. They govern the points of interest and determine their strength and expression. The transverse elements through all the local sections of the body are points of intrest to the extent to which they may be moved upon the primitive outline without changing its form or proportions. When the body appears too long, it is too narrow; when too short, it is to wide. When the body is too large, the head is too small. When the body is too small, the head is too large. A line too much or too little in the shoulders will make the feet that much too large or too small. When the features are fine, the extremities should be fine. When the joints are broad, the extremities should be broad. When the neck is short, the fingers and toes should be short. When the eyes are large and well formed, the mouth, chin, and nostrils should be well formed. When the flanks are too high, the body in side view will appear too short, and the loins, gluteal section, and legs too long.

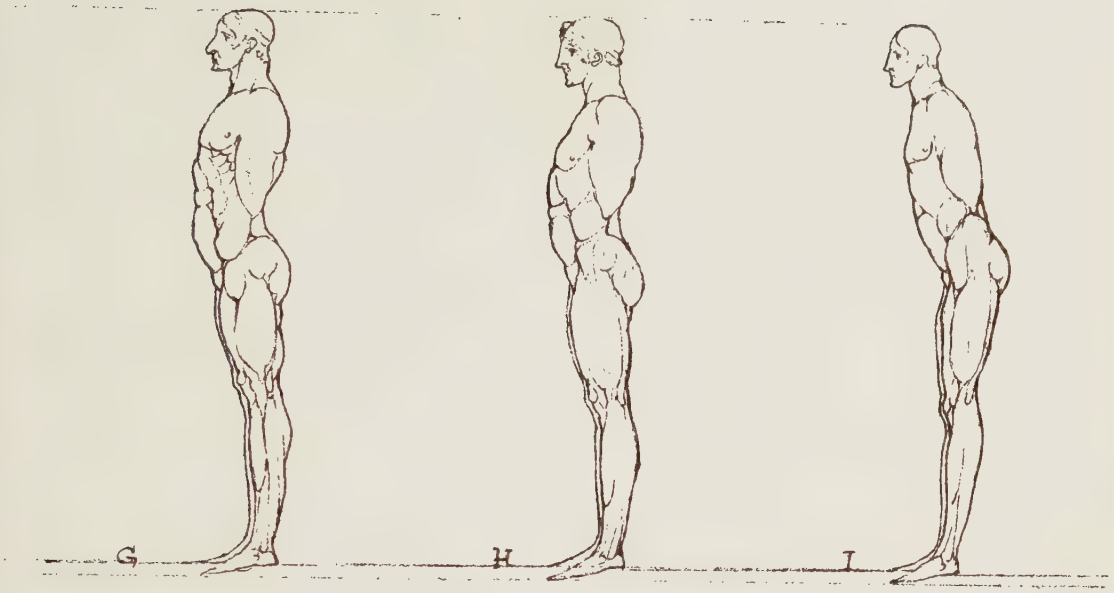
No. 242
Profile view, details accented.

No. 243
In animal-like men the details of structure peculiar to men of the higher forms are never fully developed.

No. 244



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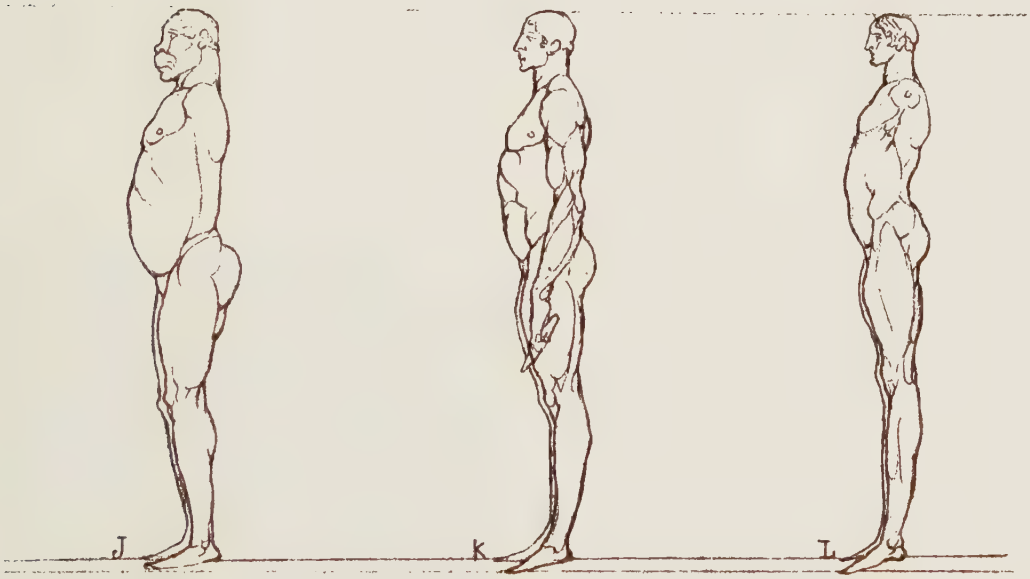
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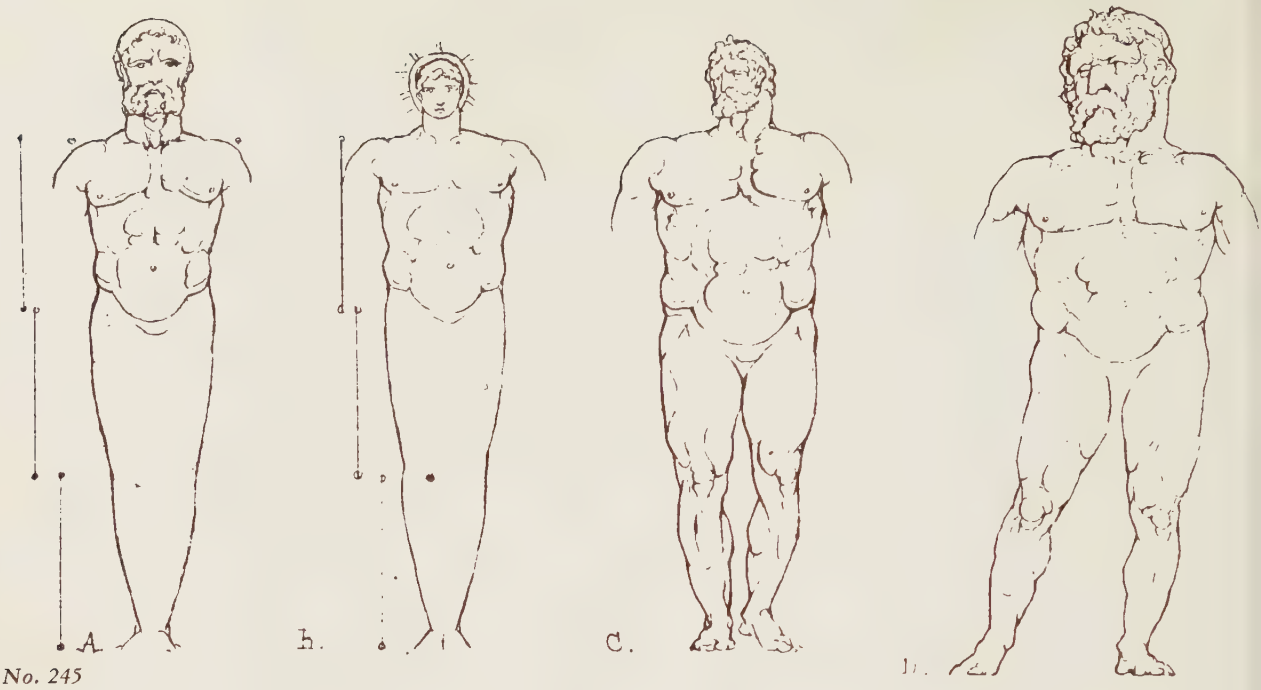

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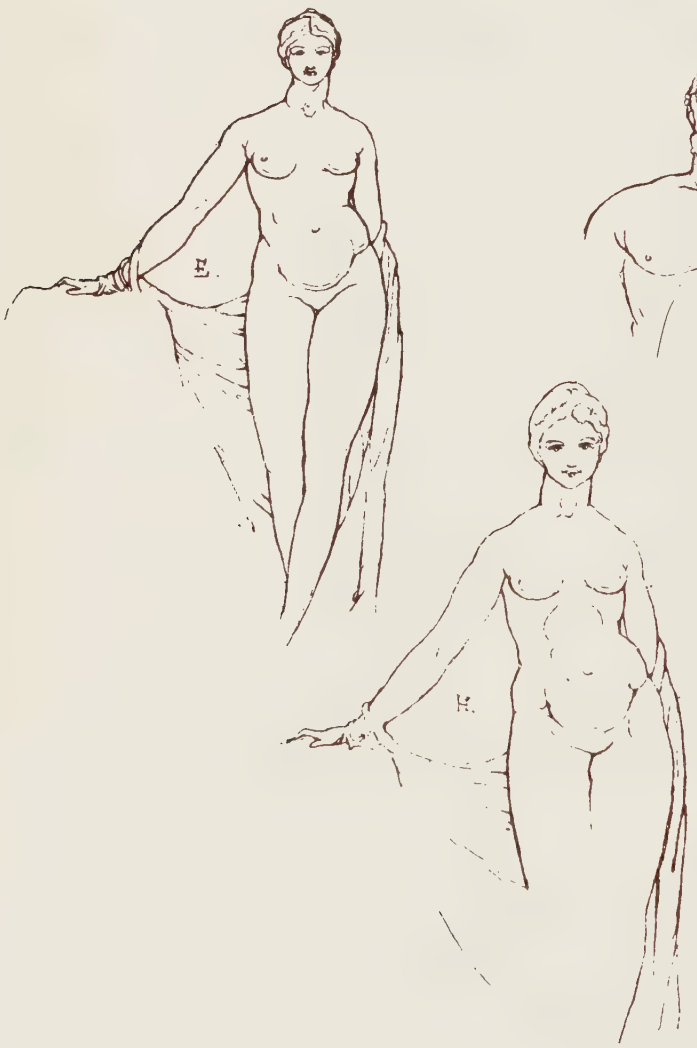
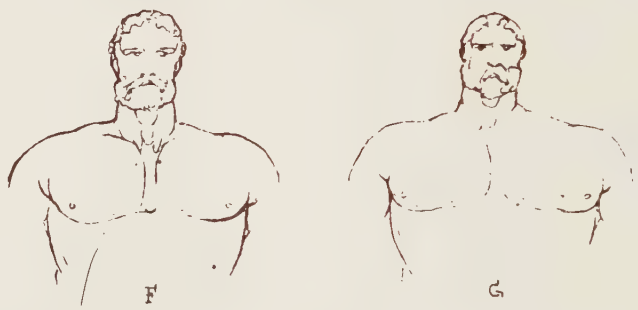




In the element of proportion men are large or small as the head is large or small, inversely, regardless of their size. When the head is too large or too small, the body, in corresponding degree, is too small or too large. When the head is too large, the whole person seems dwarf-like and the character personal and more or less disorderly. When the head is small and impersonal, the whole person appears impersonal, and if the head and general body are alike well formed, grave and orderly. Compared with the heads of ordinary men, the heads of children are large. The heads of dwarfs are large. The heads of women are generally large. (Contradictory: Women having small heads and small and well-formed features resemble children. Women having large heads appear man-like.) There can be no such thing as fineness of proportions in any person in whom the head is too large, especially in those in whom there is that exaggerated protrusion of the frontal portion of the brain so much admired by phrenologists. Anything that increases the apparent size of the head belittles the general body. A statue of mean proportions is meaner in proportion as its bulk is greater. A statue of fine proportions is fine in proportion as its bulk is greater (within certain visional limits). When a statue is to be of great size, something of the proportions of men of the finest development should be given to it, that is, size which is an element of proportion affecting the sensibilities may not be contradicted by the personalities of its individual forms.

No. 246
4-1/8 Heads. Average
9 months.

No. 247
3-3/4 Heads. Average
4 months.

No. 250
4 Heads.

At the period of early infancy the abdomen is circular and pendulous; the pelvis narrower than the abdomen; the distance from the pubis to the sacrum short; the pubis far behind the umbilicus; the scapular bones small and high up upon the back, and the distance between them much greater than in the adult body; the loins long; the neck short and thin; the cervical portion of the trapezius thin and well defined, generally a fold of integument between the top of the back and the trapezius; the sterno-mastoid small and generally well defined; the thyroid cartilage small; the cheeks pendulous; the neck small at the base; the distance from the neck to the top of the shoulder short; shoulders high and narrow; the distance from the back to the breast bone greater often than the distance at the lower border of the axillae, from one side of the ribs to the other; sternum high; ribs short and wide apart at their base; local sections undefined in very young children; joints small and loose and, more or less, in consequence of the thickness of the integument covering them, dimpled; the form of the joints obscured by thick folds of integument; the feet and hands small; the nates narrow; the trochanters small; the arm long; the thigh short; the heel, as in the adult body, extending when the leg is bent fully to the ischium; the gluteal section small and well defined; the outlines of the front of the body and limbs generally circular.

No. 248
3-7/8 Heads. Average
6 months.

No. 249
5-1/8 Heads. Average
12 months.

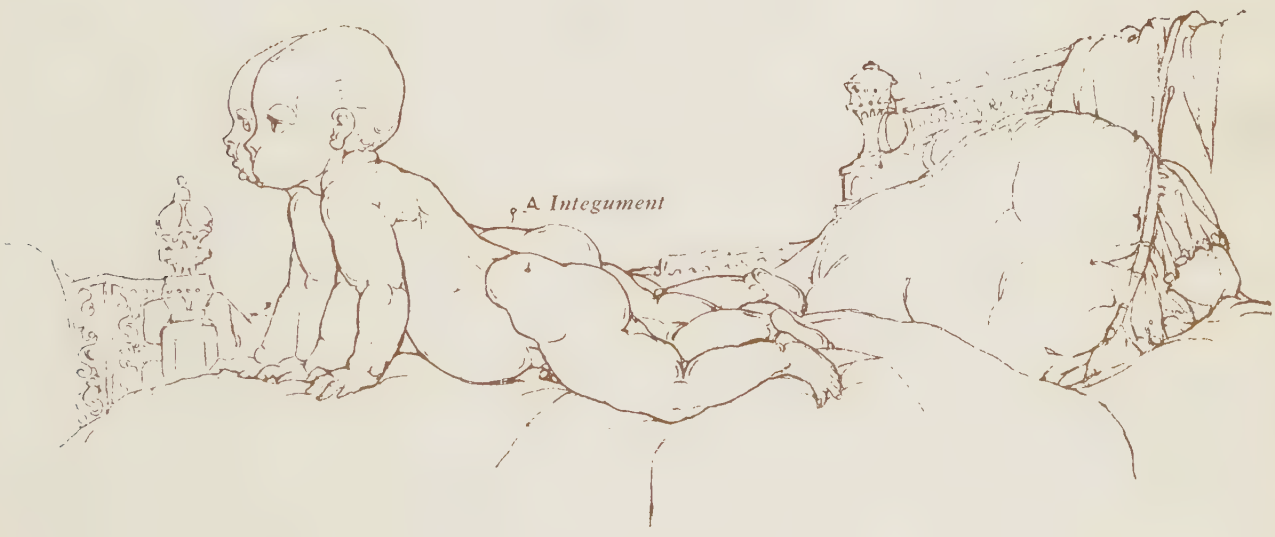
No. 251
Bones

No. 252
Muscles

No. 253
Integument

No. 255

No. 254



No. 256

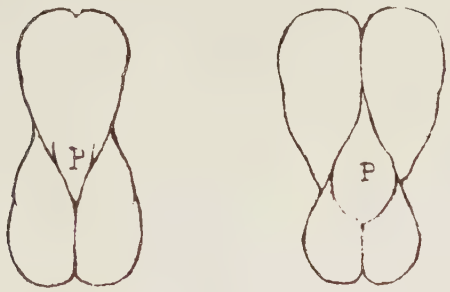
No. 257
1st Stage

No. 258
2nd Stage

Nos. 257, 258. In comparison with the proportions of an adult, the head of an infant is large in proportion to the size of the body; the body large in proportion to the size of the limbs; limbs large in proportion to the size of the hands and feet. In the first stage of development the spinal muscles are too feeble in their action to maintain the body in an erect position. The back is convex; the abdomen large and bag-like; and the legs and arms bent outward.
Suppositional: The expression serious and void of passion. The mind curious and attentive.

No. 260
2nd Stage

No. 259
3rd Stage

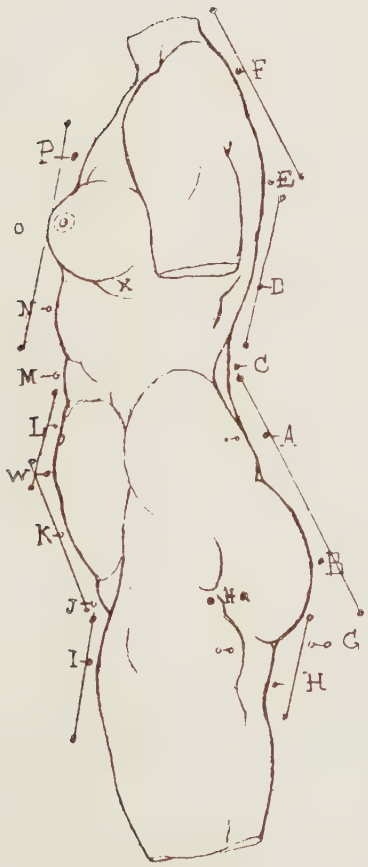


Female *Male*

No. 261

Showing the peculiarities of form which distinguish the male from the female body. (A sexual difference in the shape of the body common, in some degree, to all vertebrate animals.)

In Men, the principles of structure are in nowise subordinate to the sexual functions. In Women, the principles of structure are adapted to the sexual functions and are their subordinates. Women, notwithstanding the great perfection of the general body, resemble children more than they do men. Their bones are small; joints loose; shoulders and back weak; the face small; the brain large; the lower abdomen full; the chest thin; the small of the back, or upper part of the loins, thin and feeble; the integument of the pelvis, arms, and legs, thick; the hands and feet small; the back flat; shoulder blades small; and the movement of the body and arms generally from the hips. The average female body is one quarter less in size than the male body. Male brains of the largest size weigh from 60 to 64 ounces; female brains of the same order in any variety weigh 4 ounces less. The width of the hips should never exceed the width of the shoulders.



No. 263

A. Integumentary Body.
B. Gluteal section.
C. Spinal muscles.
D. Latissimus Dorsi.
E. Scapular section.
F. Integument covering the top of the back.
G. Integument covering the upper part of the outside of the thigh. Peculiar to women and children, and corresponding to the strongest portion of the Vastus externus muscle.
Ha. Cavity.
I. Crest of the thigh. Integumentary body covering the strongest portion of the Rectus muscle.
H. First plane of the back of the thigh.
J. Pubic integument.
K. Lower and upper planes of the umbilical section.
W. Crest of umbilical section.
M. Supra-umbilical section.
N. Epigastric section.

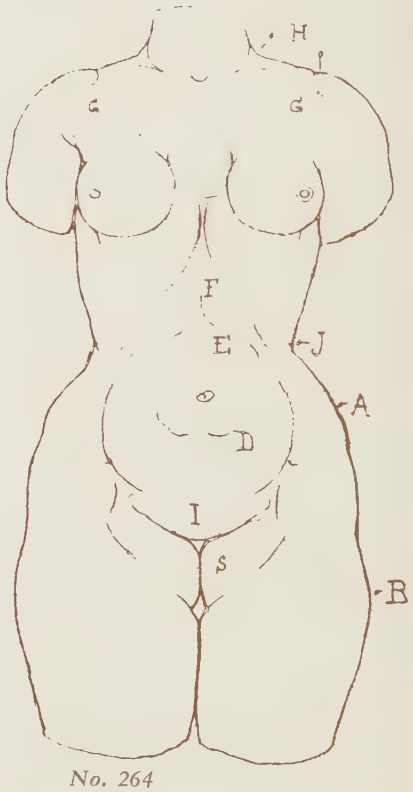
P. Sternal section.

Points of Interest
A. Integumentary body.
B. Pelvic circle, extending from the waist J to the bottom of the Vastus Externus, V.
D. Umbilical section.
E. Super-umbilical section.
F. Epigastric section.
G-G. Upper region of the chest.
H. Trapezius.
I. Pubic integument.
C. Thick integument below the knee joint.
X. Crest of the ilium.
K. Fold of integument.
S. Vitality.

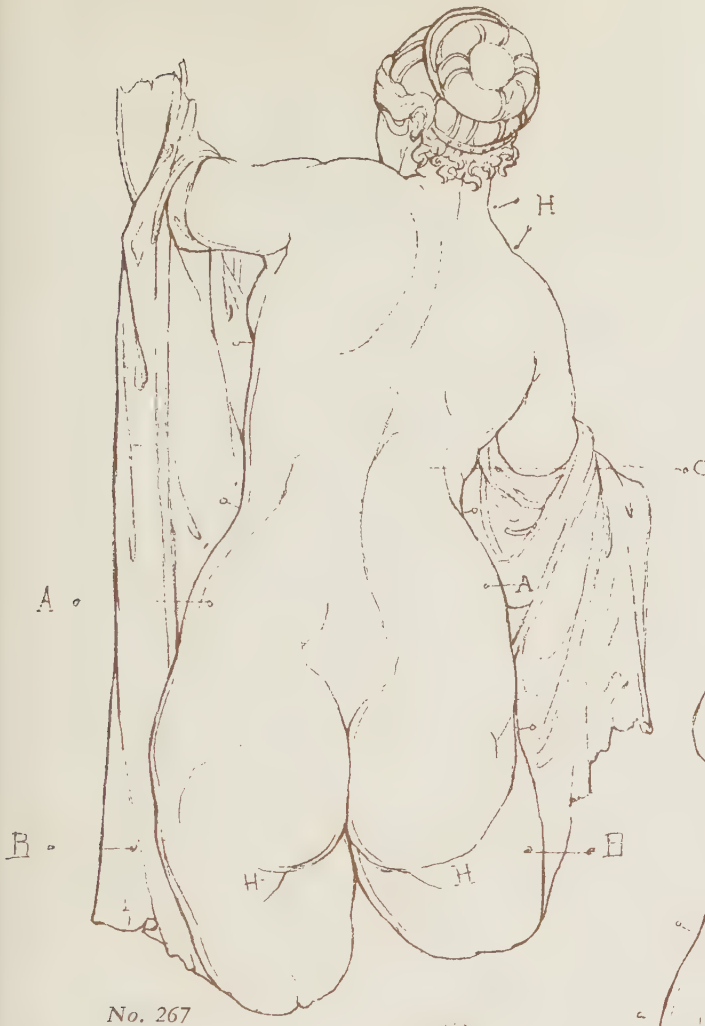
No. 262

No. 265
Natural waist

No. 266
Muscular detail in full

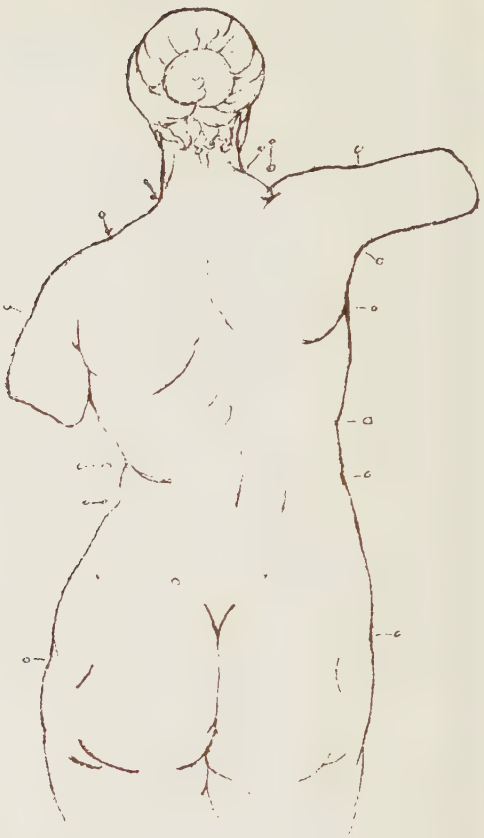


No. 264
Deformed waist



No. 267

No. 268



No. 269
Attitudes peculiar to women

No. 271
Flesh of the neck in folds

No. 270

No. 272 Pelvic section, thigh, arm, and shoulder seen from beneath.

In Fore-shortening, we represent the transverse proportions of the local sections, and a careful study of the outline in the vertical figure will show the relative surface elevations of the different parts.
Parts which are fore-shortened should be supported by an exhibition of parts which are not fore-shortened, as in Nos. 273, 277, 278, 279. The transverse elements can be fore-shortened only in their perspective relations.

No. 273 Form of the pectoral and abdominal sections one half fore-shortened.

No. 274 One quarter fore-shortened.

No. 275 Three-quarters view. One third fore-shortened.

No. 276 Outline of shoulder and pelvic sections seen from above.

No. 277 Shoulder, clavicular, pectoral, abdominal, and flank sections seen from above and in front.

No. 278 Outline of the neck, shoulder, scapular, dorsal, clavicular, and umbilical sections seen from above and behind.

No. 279 Direct fore-shortening from above.

No. 283

No. 280

When such parts of the body as are not fore-shortened cover other parts, which from the character of the position must be fore-shortened, if seen, the truthfulness of the fore-shortening will depend upon the accuracy of the projecting part in relation to the supposed place of the part obscured. Fore-shortening of this description may be known as Fore-shortening by Obscuration.

No. 285

No. 282

No. 284

No. 281

(*continued from front flap*)

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William Rimmer

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Rimmer was also a first-rate anatomist and dissector, and it has been said that he knew the human body better than any other artist, from the Greeks to the moderns. This volume, first printed in a rare edition of only 50 copies by a long-dead printing process called heliotype, is the summit of his knowledge.

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